OPTIMIZING THE WEAPONS OFFICER IN THE MOBILITY AIR FORCES

GRADUATE RESEARCH PAPER

Christopher D. Uhland, Major, USAF

AFIT-ENS-GRP-15-J-023

DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY

AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

AFIT-ENS-GRP-15-J-023

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GRADUATE RESEARCH PAPER

Presented to the Faculty

Department of Operational Sciences

Graduate School of Engineering and Management

Air Force Institute of Technology

Air University

Air Education and Training Command

In Partial Fulfillment of the Requirements for the

Degree of Master of Science in Logistics

Christopher D. Uhland, BS, MBA

Major, USAF

June 2015

AFIT-ENS-GRP-15-J-023

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Christopher D. Uhland, BS, MBA

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Committee Membership:

Joseph R. Huscroft, Lt Col, USAF
Chair (Primary Research Advisor)

Abstract

This graduate research paper analyzed potential recommendations commanders in the Mobility Air Forces (MAF) can implement to optimize the utilization of their Weapons Officers (WOs). To accomplish an unbiased analysis, the researcher performed a Delphi Study of 34 officers of various ranks with command experience ranging from squadron to graduated wing command. Participant backgrounds included Weapons Instructor Course graduates and non-Weapons Officers with experience in multiple airframes. This enhances the credibility of the study by gaining insights from commanders developed via "depth" and "breadth" cultures. Panel members shared their perceptions and insights over three survey rounds to determine ways for operational wings to utilize the skillset WOs develop at the USAF Weapons School and enable their development in a MAF culture that values officers with a breadth of experience.

The panel approved five recommendations ranging from organizational structure changes to timing and specific job placement. Major findings included the organization of a tactics office as a flight, considering placement of the Wing Tactics Flight directly under the Operations Group, and focusing on optimal timing at the 6 year Total Active Federal Commissioned Service Date (TAFCSD) for USAFWS candidates to maximize the command's return on investment. The researcher also developed a "Targeted Normalization Theory" to quantify cultural divergences of thought in a panel sharing many commonalities.

To the two most important ladies in my life

Acknowledgments

I would like to express my deepest gratitude to several key supporters for the compilation of this research. Thank you to our MAF Senior Weapons Officer and my sponsor, Brigadier General Brian "Smokey" Robinson for mentoring me during this year on the future development of our community. Thank you to Colonel Adrian "Elmo" Spain for affording me your time to discuss this research and providing the cornerstone necessary for my targeted normalization theory. This paper would not be complete without the patience and guidance from Lieutenant Colonel Sean "Rerun" Serfass who welcomed me into his office at all hours to discuss ideas and review my progress. Thanks to Lieutenant Colonel Joseph Huscroft and Lieutenant Colonel Adam Reiman for advising me on this topic, providing exceptional feedback, keeping me focused and on schedule.

I would also like to thank the anonymous commanders that took the time from their incredibly busy schedules to share their thoughts and insights into officer and organizational development; these pages would truly not be possible without your assistance and desire to make the future of the MAF the best it can be. I truly hope that this paper is a representative account of your contributions. Finally, I would like to thank Ms. Pamela Bennettbardot. You are a master of your craft. We could always count on you through classes and our research, and ASAM is forever grateful to have you as part of our family.

Christopher D. Uhland

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I. Introduction

Background

The mission of the USAF Weapons School is to "train tactical experts and leaders of Airmen in the art of integrated battle-space dominance across the land, air, space and cyber domains" (99 ABW/PA, 2014). Initially founded as the USAF Fighter Weapons School in 1954, it has grown into the preeminent leadership development program for the Combat Air Forces (CAF). Only within the last 20 years has the Weapons School evolved to include Major Weapons Systems from the full spectrum of the Air Force's core capabilities. The Mobility Air Forces (MAF) added Weapons Instructor Courses (WIC) for C-130 aircraft in 1996, KC-135 aircraft in 2000 and C-17 aircraft in 2003. With specified training in tactical operations and integration with Air Force assets, Weapons Officers are intended to return to their units and instruct their squadron members on all methods of combat employment ensuring their unit's designed operational capability. They are trained to identify deficiencies and develop training programs that meet current and anticipated missions. Their primary environment is the Tactics office, one of the most highly valued organizations in a CAF squadron. Due to multiple mission sets during peacetime operations and non-kinetic methods of employment, MAF squadrons place a dissimilar value on tactics functions than the CAF. Additionally, the MAF has multiple professional development programs that focus on competencies dissimilar to the WIC; the primary objective of the programs described below is to build an officer's competence in a wide array of mission sets to give them better perspective into the larger MAF enterprise. These cultural differences can be succinctly described by two terms: breadth and depth.

On Breadth and Depth

Breadth and depth are common words in the Air Force. In terms of MAF officer development and in this paper, the term breadth refers to experiences outside of a primary specialization. Examples could include an officer transitioning from one Major Weapons System (MWS) to another or leaving an operational squadron to gain experience in a contingency response wing. It could also denote an officer hired outside of their operational squadron to fill a position at the Wing or Group staff level. Depth in this context refers to honing a specialization, including WIC attendance or possibly becoming a Formal Training Unit, or schoolhouse, instructor for their primary MWS. While the CAF singularly features the WIC as an officer development program, the MAF has several additional programs that provide officer development through a breadth of experience.

Air Mobility Command (AMC) released a PHOENIX HORIZON Concept of Employment (CONEMP) in February of 2105 which included three separate programs: PHOENIX HORIZON-TORCH (PH-T), PHOENIX HORIZON-REACH (PH-R), and PHOENIX HORIZON-MOBILITY (PH-M). All programs are designed for officers with 4-8 years Total Active Federal Commissioned Service (TAFCS). PH-T is a program that develops officers through a staff broadening position at AMC, 18th Air Force, or 618th Air Operations Center (TACC) to educate them on command-level programs and senior leader decision making. PH-R is a MWS crossflow program intended to develop well-rounded mobility officers experienced in air refueling and airlift platforms. PH-M develops officers with a strong foundation in contingency response operations (AMC/A1KO, 2015). Although all Horizon programs are very different, the underlying theme linking them all is the breadth an officer gains through new experiences outside their primary specialty. This differs from the WIC construct with a focus on building a depth of knowledge in a specific platform and fluency on integrating

the effects other Air Force assets can deliver to achieve battlespace dominance. This difference lends relevance to the established MAF culture and the problem statement illustrated below.

Research Problem Statement

In March 2014, Lieutenant General McDew, the 18th Air Force Commander at the time, corresponded with Commandant of the USAF Weapons School (Knowles, 2015). In it, he wrote about his interest in continuing to make WOs an integral part of MAF professional development. Although the USAF Weapons School has existed for nearly 60 years, both the MAF and the CAF can strive to continuously improve on the utilization and development of their graduated Weapons Officers (WOs). AMC holds the breadth of an officer's resume in high regard. This is evidenced by the an umbrella of three self-developed PHOENIX HORIZON programs that focus on reassigning a high potential officer from one mission specific airframe into an airframe with a differing air mobility role, into a contingency response mission set, or in to staff positions for an enterprise perspective. While all four have been identified as special programs by the command, the differing intents between the WIC and the PHOENIX HORIZON programs have the potential to create a dichotomy of thought for commanders in the development of their officers.

Regulatory guidance outlines intended positions for WOs with the intent that graduates would impart their experiences from the WIC to the squadron, building a more capable unit. This differs from the PHOENIX HORIZON construct because the flexibility of job placement meets the programs' intent of building a breadth of experience for the officer. With this disparity, if commanders in a breadth-valued culture attempt to develop WOs in a similar manner to PHEONIX HORIZON officers, it may lead to unintentional, but inefficient utilization of WOs in the MAF community.

Research Questions

The objective for this project is to gain a consensus from experts on effective development paths and future utilization for MAF WOs. This will maximize the return on investment made by the command to cultivate tactical employment experts and facilitate the proper timing required to cultivate the breadth of experience and competencies AMC desires for its future commanders. The focus group of this research includes experienced rated MAF officers who are graduates of a WIC as well as non-WIC graduates who are currently in command positions at the squadron, group and wing level to answer this primary research question:

In terms of professional development, what should the progression of a Weapons Officer in the MAF look like after graduation from the USAF Weapons School?

Several secondary research questions were also asked to frame subsequent rounds, and they will be discussed later in the methodology section.

Hypothesis

A major challenge with the development of MAF WOs specifically is balancing the officer's duty history with jobs they were designed to fulfill and other broadening opportunities. Being "stovepiped" into multiple tactics related positions may be considered undesirable for performance evaluations and future advancement. This axiom and the current architecture of tactics offices at the wing and squadron level may lead to inefficient placement of WOs to facilitate career progression. The researcher hypothesizes that specific organizational changes in an operational wing can more effectively place and empower WOs to fulfill the intent of their

training without hindering the opportunity for future development. Additionally, more deliberate targeting should be applied in the grooming of candidates based on age and timing to maximize the command's return on investment.

Assumptions/Limitations

It is assumed that officers in command positions are vigilant about their professional communications and opinions, not only because they hold positions that influence their subordinates, but also because they may wish to guard their personal views against future attribution. To protect the confidentiality of the participants in this research, the researcher did not ask for any personally identifiable information on the survey; only minor demographical information was requested to analyze answers based on specific groups such as rank and weapons system. In order to preserve the integrity of the data being collected, subsequent rounds of the survey have a logic question that disqualifies a respondent if they did not participate in earlier rounds. It is assumed that participants did not willingly misrepresent earlier participation in order to gain access to subsequent rounds of questions.

With anonymity comes the limitation of participation. Although requests were sent to a panel size large enough to claim statistical relevance, there was no guarantee that there would be a large enough pool of respondents, or that the panel would be diverse enough to yield credibility for recommendations involving multiple airframes. Panel attrition is also assumed because temporary duty, deployments and demanding schedules may prevent a respondent from completing all three rounds of the survey.

Implications

Analysis from this research should provide Senior Leadership with a future development roadmap for Weapons Officers from pre-candidacy to staff positions following Intermediate Developmental Education (IDE). Every officer and situation is unique; therefore, these recommendations are not to be taken as exact paths that must be strictly adhered to, but more as an initial framework for commanders and officers interested in the WIC. Placing WOs into positions that leverage their competencies for the maximum amount of time will ultimately develop a more effective and combat ready crew force.

II. Literature Review

Chapter Overview

Little is written on the topic of officer development in academic journals, and even less concerning the niche of the Weapons Officer community. This chapter will review the regulatory guidance governing the placement and use of WOs at the wing level and below. Additionally, papers written by students in the USAFWS on the purpose and benefits of Weapons Officers will be reviewed. Finally, papers analyzing overall officer development will be taken into consideration. Because of the limited amount of resources available, a survey of commanders charged with the development of officers will be used to gather current, relevant data. To properly gauge responses both qualitatively and quantitatively, the Delphi method and Likert Scale are the foundational tools used for this research to gain new insights. A review of regulatory guidance and other writings pertaining to WOs must be examined first before creating questions regarding their development and utilization.

Regulatory Guidance

The governing regulations regarding the management of Weapons Officers and Tactics programs is *Air Force Instruction 11-415, Flying Operations: Weapons and Tactics Programs* and *Air Mobility Command Instruction 11-207, Flying Operations: Weapons and Tactics Programs.* These documents define levels, or tiers, for WOs post-graduation and set expectations for the placement of assets. "Tier 1 jobs are defined as those jobs that directly support warfighting units or organizations" (AFI 11-415, 2010). These positions typically reside at the operational squadron level. AMC specifically references the squadron level tactics office to be a flight whose chief directly reports to the commander or operations officer (AMCI 11-207, 2011). However, as of this writing only 64% of squadrons in AMC have the squadron organized

in this fashion and only 42% of squadrons have a WO assigned to an operational squadron. Eight squadrons in AMC have the tactics office organized as a section or do not have a tactics office at all. This is problematic for several reasons. The position of section chief is typically a position filled by a junior to mid-level captain; however, the average age of Weapons Undergraduates (WUGs) entering MAF WICs in CY14 is 7.9 years TAFCSD (AMS, 2015), which would have officers entering their year for promotion to Major at graduation. This age range, which is slightly older than the CY14 CAF average of 7.6 years, is more commensurate with that of a flight commander position. This age disconnect can create a hindrance for a WO's professional development if they graduate from the WIC at the current average age and are placed in a section chief position that could make them non-competitive for advancement. Conversely, if a new graduate is placed into a flight command position not related to their recent course of study for development reasons, AMC is missing the opportunity for the WO to be employed in the manner intended at the optimal time. Once seasoned at the squadron level, the next tier for a WO lies at the Group Weapons and Tactics office.

These governing regulations also describe the Group Weapons and Tactics office as a flight that reports directly to the Operations Group Commander (OG/CC) or the Operations Support Squadron Commander (OSS/CC) (AMCI 11-207, 2011). With the exception of one wing, all AMC Wings follow the construct that places the Group Weapons and Tactics Flight in the OSS. While this organization adheres to guidance, it creates an additional layer of reporting between a Weapons Officer and the Operations Group Commander which could prove detrimental if the ability to advise the commander is ever restricted. Tier 3 positions are typically reserved for headquarters staff billets, but WOs graduating from Tier 2 positions may

not immediately go to a headquarters staff. This leaves interim placement at the discretion of the commander, and it does not necessarily have to be a tactics related position.

It is myopic to think that WOs should only hold tactics positions or that their level of knowledge, critical thinking and planning abilities only hold value in a tactical employment realm. AFI 11-415 (2010) does guard the autonomy for WOs to gain breadth beyond tactics positions with the verbiage, "Assignment priorities *do not* dictate that Air Force Personnel Center (AFPC) or commanders fill W-prefix billets to the detriment of professional development, unit need, or Air Force requirements". This statement gives commanders the flexibility to develop their officers as they deem most appropriate and gives WOs the opportunity for experiences that would broaden them as leaders in the Air Force. One such path may be the training office since instructorship is a core function of the WIC. Worthy of note, regulations already provide a solid foundation for the integration of training into a tactics office.

AMCI 11-207 (2011) states that a squadron tactics shop will "ensure tactics objectives are incorporated into all training missions" and "aircrews are trained and proficient to tactics-related evaluation criteria". AFI 11-415 (2010) advances that sentiment saying "the weapons shop is the Office of Collateral Responsibility (OCR) for unit mission training, exercises, mission planning and evaluation scenarios" and is responsible for "identifying deficiencies in training" and "assessing unit combat capability to accomplish anticipated missions". This provides a basis for a tactics office to not only ensure capabilities for mission requirements are met for today's mission, but beyond as well. The tactics office should develop training plans for a unit to meet future requirements based on operational plans developed at the combatant command level. Developing such profiles requires intense analysis, a competency learned at the WIC when students pen their paper to fulfill graduation requirements. Several of these papers that relate to this topic of study are outlined below.

USAFWS Papers

"As a requirement for graduation, USAFWS students will prepare a 15-20 page graduate-level research paper providing innovative and original thought while advocating a specific [MWS] war-fighting employment issue, concept or tactic" (USAFWS, 2011). Since the thesis for a graduate's research typically focuses on tactical employment, little has been written on the topic of WO development for academic purposes. However, there are a few graduate papers that discuss the subject. A C-130 WIC paper advocated for the inclusion of MAF WO management into the AFI 11-415, the regulation which governs the recommended job placement of all Weapons Officers (White, 2000). The Air Force implemented that recommendation and authoritative guidance now exists to place a certain number of WOs in an operational wing. However, once assigned to a unit, the squadron commander still has the overall discretion of job placement. And without a firm knowledge base of the capabilities a Weapons Officer can provide, WOs may be placed in positions that may not benefit the unit most appropriately. Many KC-135 commanders have openly admitted that they do not know what to do with their WOs at the unit level on a daily basis, and many are deployed to Air Operations Centers (AOCs) where their perceived value lies (Black, 2003). While a WO can greatly enhance the capabilities of an Air Mobility Division (AMD) within an AOC, they can also provide invaluable contributions to unit-level training. In fact, a paper from an AFSOC student contended that one of the primary duties of a WO should be the creation of a training plan that focuses on the priorities identified by the squadron's operations officer (Gunn, 2008).

Holistic Officer Development

One very important analytic point to remember when considering the development of WOs is that they are only a small subset of officers in general, all of which follow the same

hierarchical structure for promotion. Currently, WOs have to serve a five year Active Duty Service Commitment (ADSC) with three years continuous initial service (AFI 11-415, 2010). When this requirement was originally drafted, the timeline for promotion to major was at the twelve year point. This shortened to the eight year point in 2006. The shift in timeline from 1977-2006 is illustrated below in Figure 1.

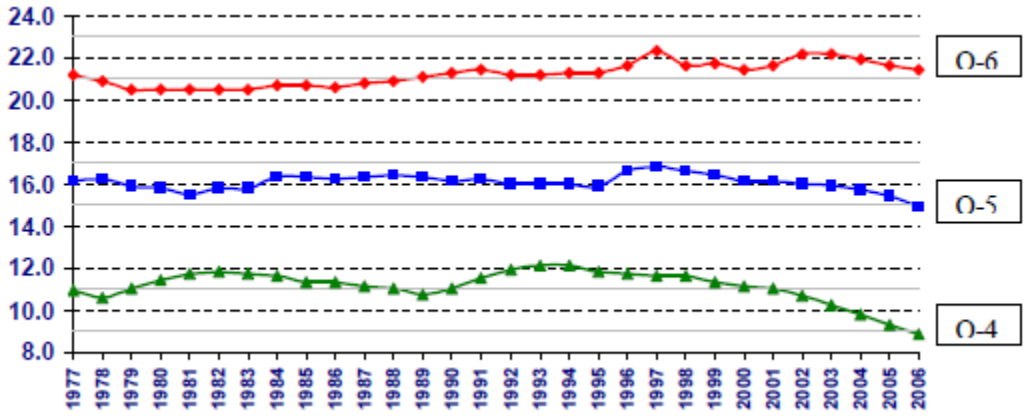


Figure 1: Officer Promotion Timeline (Hafer, 2007)

Beginning in 2014, promotion boards for major shifted one year to the nine year point. AFPC's goal was to keep the pin-on date the same, but eliminate the nearly one year waiting period from Major (select) status to actual promotion due to a large pool of candidates who needed to promote and the small promotion increments allowed by law. Later analysis will show that this shortened timeline for promotion to the rank of Major may have precipitated the disconnect between the jobs Weapons Officers were originally sent to, post-graduation, and the assignments some fill in AMC today as newly minted WOs.

While this was the most extensive research discovered relevant to the development of WOs, it did focus mainly on mobility pilots in general. With this scant amount of former published research, more data was needed in order to derive valid recommendations for a way

forward. To obtain this data, a current polling of commanders using the Delphi method took place.

Delphi Method

Many decisions made by senior leaders can have an instantaneous impact, if they create undesirable consequences, they can also be corrected in a timely and appropriate manner. Fewer and far more difficult to correct are decisions whose impacts are not instantly transparent or create second and third order effects. The Delphi Method was developed by the RAND Corporation in the 1950s specifically for the purpose of long-range forecasting. The term Delphi itself was coined for the method by a UCLA professor, and it relates to the Delphic oracle from ancient Greece whose prophetess would reveal the divine purpose of the gods in order to shape future events (Cuhls, n.d.).

The goal of the Delphi Method is to collect a panel of experts, and through multiple rounds of questions, focus the group to a general consensus on a topic. The panel members remain anonymous so as not to influence ideas or discussions from other members. However, results from previous rounds are provided to inform the experts of the general feelings of the group, and the same or similar questions are posed again for evaluation. This may alter an expert's assessment or they may decide to remain with their original view (Cuhls, n.d.).

The Delphi method can be used to collect both qualitative and quantitative data. For instance, Round 1 of this research posed open ended questions and collected the most popular responses from the panel. Those responses were then used in the subsequent round as options for the panel to rate quantitatively. The quantitative values calculated were based on a system of concurrence known as the Likert Scale.

The Likert Scale

In order to obtain quantitative values for survey questions, a numerical designation must be assigned to a given response. One of the most common scales in judging attitudes during surveys was developed by Rensis Likert, with scales of concurrence varying from choices as low as two to as high as 19 (Likert, 1932). This rating system has several advantages over the other commonly used ranking structure. One very important advantage is the ability to discern level of separation between quantities which can not only tell the researcher what method is preferable, but also the degree to which that method is preferred. An ordinal based ranking structure may tell the preferable answer, but with no degree of sensitivity from one ranking to the next. This is because the distance between the first, second, a third, et cetera ranked option is considered equal (Linstone, 1975). As stated above, the coarseness or sensitivity on a Likert Scale can vary drastically, and several studies have taken place to determine if an optimal number of choices exist for a survey. Research conducted over the years have found that several factors, including reliability, validity and stability, are all independent of the number of scale points utilized (Matell, Jacoby, 1975). A study did find, however, that outside of a 2-choice format, the 5-choice format allowed survey participants to complete their questions in the fastest amount of time (Matell, Jacoby, 1975).

Chapter Summary

Weapons Officers are bred to lead the tactics and training functions of an operational squadron, and they are meant to graduate to a position entrusted by the Wing and Operations Group commanders to ensure the employment capabilities of the unit meet mission requirements based on projected contingencies. Currently, the construct for those officers to flourish in that capacity is not present in some AMC wings. The time it takes to develop and graduate a

Weapons Officer does not correlate to the position and responsibilities it once held based on historical promotion timelines. A Delphi study from current commanders in the field entrusted with officer development can be used to find a road ahead, and their input will be analyzed and quantitatively scored based on a Likert system to generate recommended actions. A review of the methodology used for this research follows.

III. Methodology

Chapter Overview

Due to the lack of writing on the subject and to increase the credibility of this study, findings should be gleaned from experts, and recommendations for action should be judged by the same. The experts chosen for this study were commanders in the MAF at varying levels, and this study used three rounds of questions using the Delphi method to gain opinions and rate those opinions amongst their peers. Surveys were created and distributed electronically via the SurveyMonkey website. Additionally, the panel was categorized into multiple "cultures" based on demographical information to analyze statistically significant differences in how some cultures may think about the problem. Finally, a targeted normalization theory was developed to show readers an easier way to interpret statistical data, marking notable differences in thought on a simple scale from 0-10 that remains consistent with generally accepted statistical methods of data analysis.

Delphi Survey

The Delphi survey for this research consisted of three rounds. The first round asked participants a primary research question requesting their ideas on the overall development of Weapons Officers in the MAF. Several secondary questions regarding WO development were posed after the primary question response was submitted in order to shape the discussion for future rounds. These questions were posed on a separate page after the response to the primary question was submitted in order to obtain uninfluenced opinions from the panel on the primary question. Round 2 of the survey collected the most popular responses from Round 1 and restated the same or similar questions with several options to rate on a Likert scale from 1-5. The third

round questionnaire showed respondents the average panel scores for particular questions and asked them to rank their level of agreement to final recommendations based on those scores.

Survey Participants

The survey participants consisted of four distinct groups: Active Duty Wing Commanders in AMC, Active Duty Operations Group Commanders in AMC, specifically identified squadron commanders and WO functional area managers in the MAF (AMC, PACAF and USAFE), and graduated Wing Commanders who are also Weapons Officers with experience in each of the C-130, C-17 and KC-135 platforms. This enabled the facilitator to analyze the differences in responses between WIC graduate and non-WIC commanders, rank and MWS. The panel of MAF squadron commanders contained 60% WIC graduates to compensate for the small percentage of Wing and Group Commanders that did not have a WIC background.

Round One

The first round contained one primary question and several secondary questions to focus the direction of the topic, all of which requested open ended qualitative responses. The most popular replies from this round would shape the questions for subsequent rounds. The questions for Round 1 are shown below:

Primary Research Question:

In terms of professional development, what should the progression of a Weapons Officer (WO) in the MAF look like? You may consider future/relevant job placement, schooling, timing, or any other factors you consider significant.

Secondary Questions:

- What do you think is the optimal timeframe for a candidate to attend the Weapons Instructor Course (WIC) to maximize payback and developmental opportunities?

- What job should a Weapons Officer (WO) hold directly after graduation from the WIC?
- Where should a tactics office reside on a squadron level organizational chart (section, flight, etc.)?
- What is the best way to leverage a WO as an advisor to commanders at the squadron/group/wing level?
- What age/year group would an ideal Chief of Wing Tactics to be?
- Should Wing Tactics reside in the OSS, directly under the Operations Group (like OGV) or somewhere else?
- If a WO has fulfilled a Tier 1 and Wing Tactics Chief (Tier 2) billet, which positions at an operational wing would best utilize their skillset?
- Does a WO need to complete an executive officer (or equivalent) tour in order to be competitive for future promotions and or developmental opportunities?
- Should WOs be vectored towards specific in-residence Intermediate Developmental Education (IDE) schools?
- In general, should WOs attend an Advanced Studies Group (SAASS, SAMS, MAWS, SAW)?
- What staff jobs would best utilize a WOs skillset?

Round Two

Many of the questions in Round 1 provided significant answers from the panel, while some did not deliver a range of responses that merited further investigation. For example, the Round 1 questions regarding IDE and ASG attendance did not have strong enough agreement amongst the panel to warrant further questions. 68% of the panel did not think WOs should be vectored towards specific IDE schools, and those affirmative responses mainly described an in-

residence opportunity over distance education instead of listing a specific school for further analysis. The majority of questions however were asked again with options from Round 1 answers to rate on a Likert Scale from 1-5, with the score of 1 representing the least effective or desirable option and a score of 5 representing the most effective or desirable option. The complete list of questions for Round 2 can be found in Appendix B.

Two specific questions in Round 1 asked the panel the desired age of a WIC candidate and that of a Chief of Wing Tactics. With the varied age ranges and discussion from multiple panel members on time needed for developmental positions outside of tactics, visual aids were created to help view an officer's career path against specific timelines including their Promotion Recommendation Form (PRF) submission time, window to attend IDE and zones for promotion to Lieutenant Colonel. The visual aid for Question 6 regarding the desired age for a WIC candidate is shown below in Figure 2.

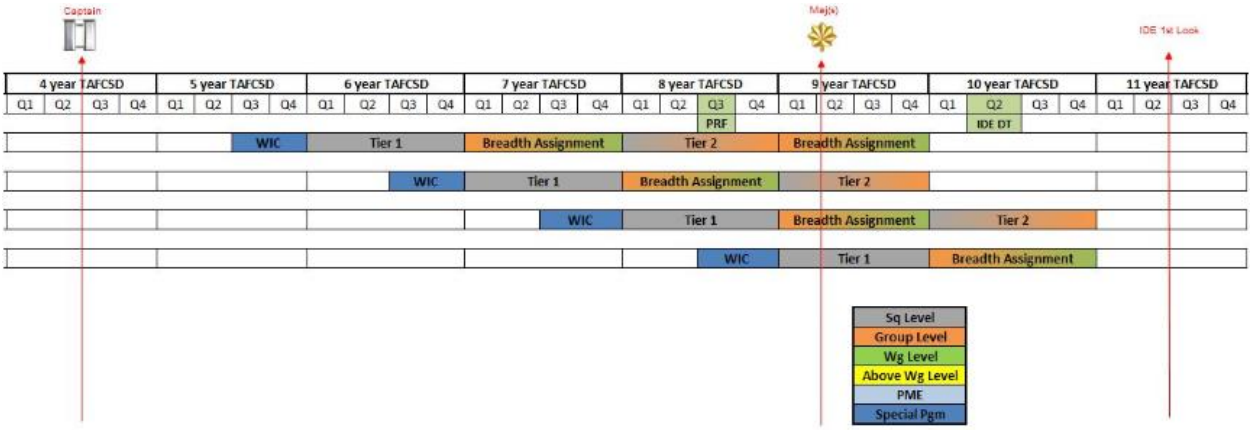


Figure 2: Round 2 Question 6 Visual Aid

Additionally, the visual aid for Question 10 regarding the desired age for a Chief of Wing Tactics is shown below in Figure 3.

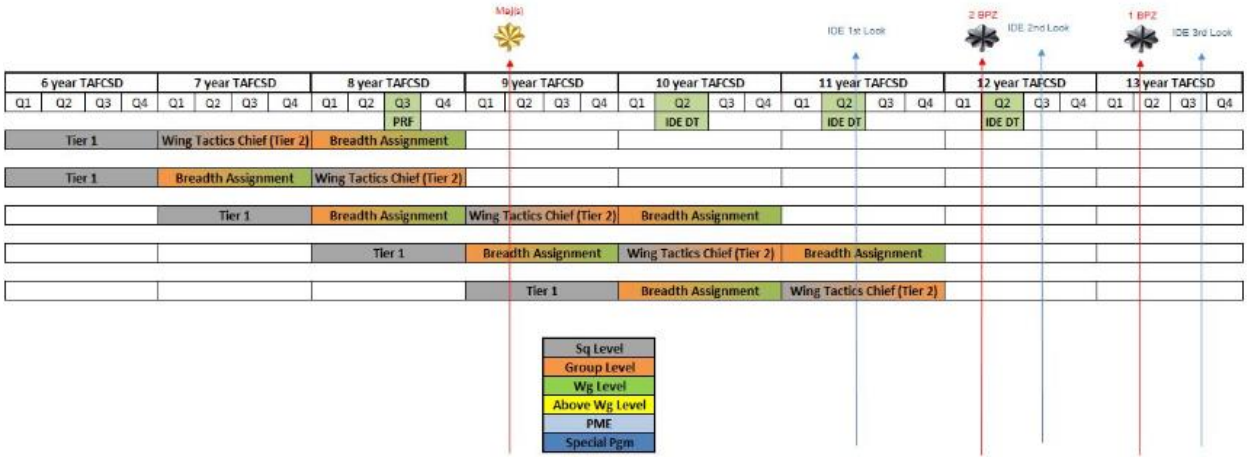


Figure 3: Round 2 Question 10 Visual Aid

Questions with Statistically Significant Responses

After the collection of quantitative data values for given questions, how does one determine its significance? Is the difference in the average score of 0.5 between all WIC graduates and non-WIC graduates for a particular issue statistically relevant, interesting but not compelling, or a deviation that merits action? Due to the use of the Likert Scale ranging from 1-5, variations in a panel of 22 members may not seem large, but when subgroups are compared to one another, the data may reveal enlightening tendencies. Therefore, when analyzing responses, panel members were grouped into the following demographic categories, or *"cultures"*:

- Primary MWS (C-17, C-130, KC-135)
- WIC and non-WIC
- Airlift (C-17, C-130 and C-5) and Tanker (KC-135 and KC-10)
- O-5 and Senior Leadership (O-6 and General Officer)

Once these *"cultures"* were established, differences in average response rates between cultures were calculated and compared to see if there were any major deviations in thought for particular available options within questions. A two-sample t-tail test of unequal variance was used to determine which differences were statistically significant between cultures. Additionally, three Percent Delta categories were developed between cultures (WIC and non-WIC, tanker and airlift & O-5 and O-6+) to measure how far apart cultures ranged on particular responses, using four as the largest possible separation limit for each group on a 5-point Likert Scale. *Percent Delta* is shown below in Equation 1 using WIC graduates and non-WIC graduates as an example:

$$Percent\ Delta = \frac{|Mean_{WIC\ Grad} - Mean_{Non-WIC}|}{4}$$

Equation 1: Percent Delta Equation

Although this equation will show an absolute percentage difference in scores, a more specific number can be determined by assuming that due to multiple similarities in the panel members, the largest possible gap in thought should not necessarily be the separation between a 1 and 5 (difference of 4) on the Likert Scale. For this calculation, however, a catalyst needs to be present to identify any possible any predispositions the panel may have.

Targeted Normalization Theory

This survey was offered to every Wing and Operations Group Commander in AMC. It was additionally sent to a group of 20 squadron commanders with varied backgrounds. And even though the respondents' choice to participate was random, the population size was not. All panel

members are Air Force Officers, qualified in MAF aircraft, predominantly male, board selected for command by AMC, and mainly in the age range of 40-50. With all of these commonalities between them, one can determine that there is also a commonality of thought at some level. Certainly the panel's thought processes would be more congruent than a young girl who works on a family farm in China, the President of the United States, and a teenage autoworker in Germany. Identifying commonality is not as much a problem as much as determining the true range of diversity of thought the panel could possess. For that, a question on a conflicting topic is needed to gain a more accurate measure of separation of thought between panel members with such commonalities.

The impetus for Targeted Normalization Theory originated in the writings of Dubner and Levitt's, *Think Like a Freak* (2014). In one anecdote, the authors titled a chapter named "Why Suicide Bombers Should Buy Life Insurance". The chapter describes an assignment they took on in partnership with the British Intelligence in order to identify terrorists through evaluation of banking metadata. The methodology included eliminating possible markers based on patterns of behavior that would not fit a typical terrorist. The lack of ATM withdrawals during times of Islamic call to prayer was one such example used to sift through millions of possible suspects. Although many markers were identified, Dubner and Levitt contended that the most telling was that a potential terrorist would never buy life insurance from their financial institution because of the suicide clause built into the policy. The authors were eviscerated in the media for publicly disclosing a method terrorists might use to evade identification. Simply buy life insurance from your bank, and you will be off the government's radar. The entirety of the aforementioned chapter, however, was itself a Trojan horse. The intent was for true terrorists to take this advice and purchase life insurance from a bank in order to identify themselves; because no one

purchases life insurance from a bank, they typically purchase it through an intermediary like a life insurance company. This anecdote sheds light on a valuable truth: it may be possible to identify tendencies of individuals sharing commonalities without explicitly asking the group their thought processes. Although it cannot be certain that a maximum divergence of thought can be quantified, a carefully designed experiment could yield a spread more reasonable than the outer limits of a given scale. For this, a question must be posed that expects panel members to have differing opinions.

Colonel Adrian "Elmo" Spain is the Commandant of the USAF Weapons School; he commands 18 squadrons ranging from fighter, bomber, air mobility, space, cyber, ICBM, intelligence, special operations, combat search and rescue, command and control and remotely piloted aircraft. In a granted interview, his insights were very valuable as to the utilization and development of Weapons Officers in other communities outside the MAF. He also provided a statement that would serve as the foundation for the targeted normalization theory. When discussing the different special programs created by AMC which focus on developing a breadth of experiences for high potential officers, he commented:

> *"If you value the crossflow models (i.e. REACH and MOBILITY programs) for development, it seems you should also have officers in leadership positions to balance that breadth with a depth of expertise within your weapon systems. If you do not strike that balance, you may increase the potential for two possibilities to occur: risk aversion (leaders may be unwilling to accept risk because their background does not allow them to assess an acceptable level of risk) and unwitting risk acceptance (leaders that may unknowingly accept more risk than is necessary for the situation). A counterargument [to the above statement] could also be made: excessive depth can lead to overconfidence in your ability to accept risk (take on too much risk, albeit knowingly) for a unit."* (Spain, 2015)

This statement was placed in Round 2 and the panel was asked to rate their level of concurrence with it. This statement was included with the initial assumption that Weapons

Officers place a high value on depth and/or expertise and would tend to agree with this line of thought. Additionally, the researcher assumed that non-WIC graduates with multiple MWS backgrounds place a high value on breadth and would be less likely to agree with these comments. The interviewee's background and current position as the Commandant of the USAF Weapons School may also predispose respondents to certain sides of the statement. If these assumptions hold true, the average scores between WIC graduates and non-WIC graduates are expected to be the largest difference (*Percent Delta*$_{MAX}$) amongst the entire survey and could be used to normalize other scores using the equation below:

$$Targeted\ Normalization\ Score = 10 * \left(\frac{Percent\ Delta}{Percent\ Delta_{MAX}}\right)$$

Equation 2: Targeted Normalization Equation

With a value ranging from 1-10, this targeted normalization score can now provide a more straightforward answer for senior leadership to determine if scores from specific questions are compelling enough to warrant further action. For example, a score differential on a 5-point Likert Scale of 2.08 would yield a 52% *Percent Delta* (reference Equation 1). Both provide little information without comparison to the rest of the survey and its responses. However, when normalized to the survey's *Percent Delta*$_{MAX}$ of 53.5%, a score of 9.7 out of 10 becomes much more noticeable, particularly if the average targeted normalization score is in the range of 3, for example.

Round Three

The third and final round of the survey created final recommendations based on the quantitative scores provided by the panel in Round 2. The panel was given all data from the previous round, including the panel mean and the mean scores for all identified cultures for each question. They were then asked to rate their level of concurrence with recommendations based on a 5-point Likert scale ranging from Strongly Disagree to Strongly Agree. The panel evaluated the final recommendations listed below:

- High Potential candidates for the WIC should be identified as early as possible and, although individual circumstances may vary, deliberately groomed with a target goal of attendance within their 6 year TAFCSD. This timeline will allow for a maximum return on investment while allowing the individual the flexibility for additional follow-on development opportunities.

- Operational flying squadrons should organize tactics functions as a flight, preferably led by a Weapons Officer with duties and responsibilities commensurate to a flight commander, with sections determined by the squadron commander in order to achieve the squadron's required combat capabilities.

- Wing and Operations Group Commanders should consider reorganizing Wing Tactics functions directly under the Operations Group to streamline AFI 11-415 reporting requirements and provide appropriate access to Senior leadership regarding the combat capability of their units.

- Assuming officers meet all qualifications and desired characteristics for the positions listed, Weapons Officers at operational wings should be considered for the following positions after completing Tier 1 and Tier 2 obligations. These positions provide a balance between the utilization of a Weapons Officer's skillset and professional development:

  Operations Officer, OGV Chief, Wing Staff, ADO, Wing Plans Chief, OST Chief

- A briefing on the utilization and development of Weapons Officers in the MAF based on panel recommendations from this study would be beneficial for incoming squadron commanders at the AMC Squadron Commander's Course

The panel was also asked to provide feedback on two questions that showed a large divergence of opinion to gain further insight. Finally, the panel was asked to reevaluate a question regarding the rating of special programs due to the fact that a new PHOENIX HORIZON CONEMP was released after the completion of Round 2 which included a new program. PHOENIX HORIZON-TORCH was included in the options for reevaluation. Those questions will be discussed later in the analysis section.

Chapter Summary

The Delphi method gathered panel opinions in Round 1, asked panel members to quantitatively score the most popular responses in Round 2, and rated a level of agreement with final recommendations articulated by the author based on analysis in Round 3. The panel was also classified into cultures based on varying demographics to see if truly significant differences existed in the way respondents viewed the utilization and development of Weapons Officers. Although analysis used foundational statistical practices for verification, the author created a new method for readers to conceptualize the data with Targeted Normalization Theory, and a simple scale can compare responses from cultures to identify significant differences in thought. The Analysis and Results section will describe the scale from Targeted Normalization Theory as well as other results.

IV. Analysis and Results

Chapter Overview

This Delphi study spanned six months. It began with 34 officers in Round 1 and ended with final recommendations from 16 officers in Round 3. Survey windows varied, but surveys typically remained open for one month in order to collect data for analysis. Although the panel size attritted over the course of the study, a varied demographical representation of panel members remained throughout the study. The author used SurveyMonkey's Text Analysis Tool to highlight common words and phrases from respondents in Round 1 and analyze responses in their entirety to collect the most popular ideas for each topic. The highest scoring responses in Round 2 were then paired with additional analysis to create recommendations for action. Additionally, when the panel was divided into cultures for further analysis, statistically significant differences were found between cultures for certain responses indicating that the choices for members within that culture were not coincidental. These differences were captured and presented on a scale from 0-10 using Targeted Normalization Theory. Panel responses from Round 3 yielded five final recommendations for this study.

Round One Analysis

Round 1 analysis completed via SurveyMonkey can be found in Appendix A. The demographical breakout of panel respondents included one General Officer (3%), 11 Colonels (32%), 20 Lieutenant Colonels (59%) and two Majors (6%). Although the researcher requested participation from a similar number of Colonels and Lieutenant Colonels, the higher response rate from the lower rank may be attributed to the fact that the latter had the higher percentage of WIC graduates. Because a large portion of respondents (11/34) skipped the question requesting level of command, the data for level of command is assumed to be unreliable for analysis. The

larger proportion of Squadron Commanders to Group/Wing Commanders though does correlate with the distribution of ranks amongst the panel. Graduated Wing Commander, Deputy Operations Group Commander and Flight Commander were additional responses not shown on the pie chart in Appendix A because they were added as an additional comment. The distribution of WIC participants was fairly even, with 38% of respondents from a C-17 background, 38% from the KC-135 and 23% from the C-130.

Regarding tiered positions held by respondents in Question 3, eight respondents replied that they only held the position of commander and never a Tier 1, 2, or 3 position. For that reason, it is assumed that those responses were from non-WIC commanders answering inadvertently. Therefore, those eight respondents (assumed to be non-WIC commanders) were eliminated from the total number of respondents for analysis of this question. For reference, raw data is shown in Appendix A. Once those respondents were eliminated, further investigation revealed that 45% of respondents (nine of twenty) served in a Tier 2 or 3 position without ever filling a Tier 1 vacancy. Keeping in mind that correlation is not necessarily causation, this statistic would support the theory that the age of historical graduates (~8 years TAFCSD) is more commensurate with a flight commander or higher position at the wing level, not that of a section chief in an operational squadron. This may be the reason that a larger percentage of graduates than expected went directly into a Tier 2 positions post-graduation without serving as a Weapons Officer in a Tier 1 position first.

Because the first round relied on qualitative responses, two major methods were used in the analysis in order to determine options for quantitative scoring in Round 2. The first method used to categorize responses was the SurveyMonkey Text Analysis Tool. The tool reviews responses from the panel and returns the most commonly occurring words or phrases, prioritizing

their occurrence rate visually by font size. When a specific word or phrase is scrolled over, the tool will tell the researcher the word's ranking and its number of occurrences in all responses. An example of the Text Analysis Tool is shown below in Figure 4 for the primary research question.

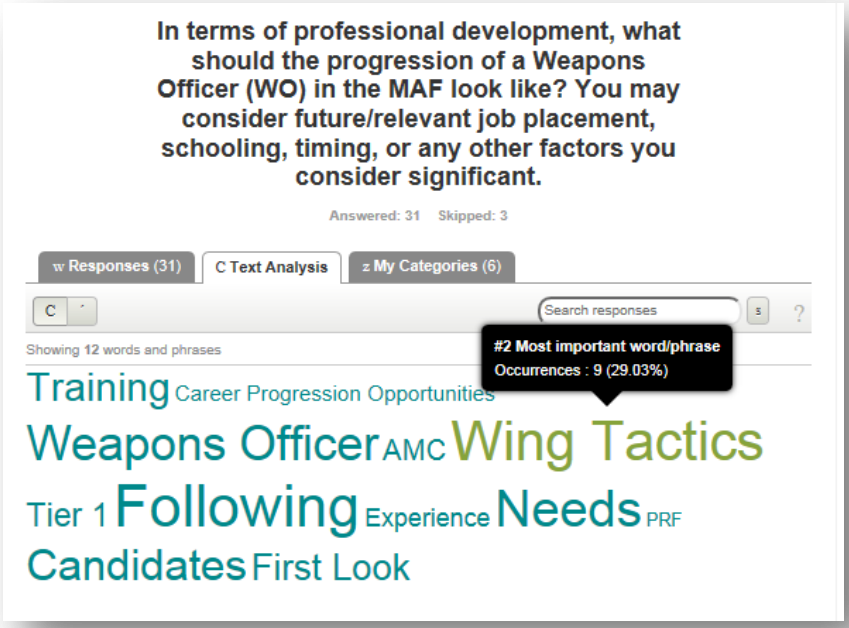


Figure 4: SurveyMonkey Text Analysis Tool

This tool served useful for several questions, but not as valuable in the analysis of others. Therefore, each individual question was also categorized after thorough review to determine quantitative scoring options for Round 2. An example of the categories developed from Round 1 is shown in Figure 5, and a full listing of categories is shown in Appendix A.

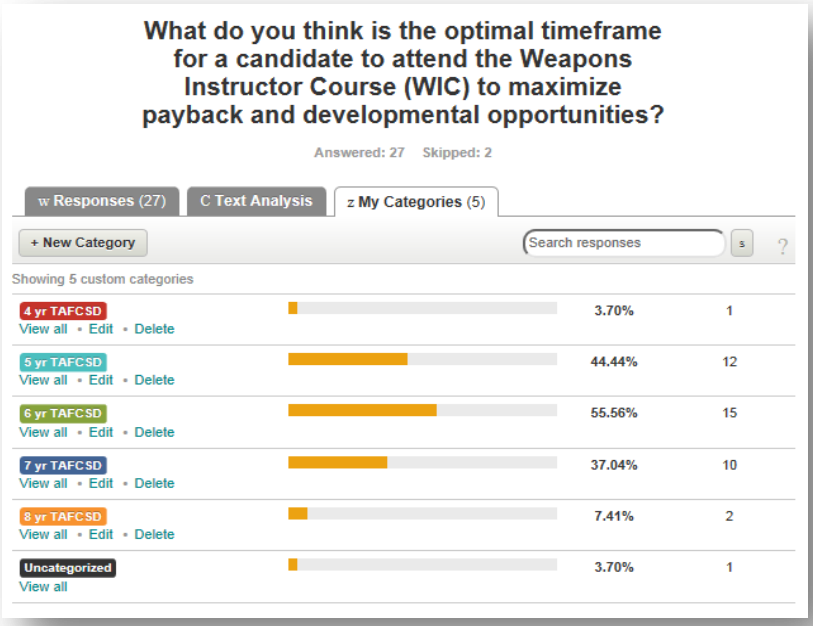


Figure 5: SurveyMonkey Category Analysis Tool

Once responses were categorized for each question, the most popular responses were used to create answer options for Round 2. To edit the survey for length, categories that only had one occurrence were eliminated and the total number of Round 2 rating options was limited to a maximum of seven options. Finally, responses to the primary question were reviewed again to glean any recurring topics that were not addressed in the secondary questions of Round 1. Comparison of the WIC to other AMC PHOENIX HORIZON programs is an example of a topic that warranted further exploration in Round 2.

Round Two Analysis

Round 2 had 22 total participants, down from 34 in Round 1. The demographical breakout of panel respondents included one General Officer (3%), seven Colonels (32%), and 14 Lieutenant Colonels (64%). MWS breakdown consisted of nine C-17 (41%), seven KC-135

(32%), five C-130 (23%), and one KC-10 (5%). The KC-10 does not have a WIC associated with it; however, Operations Group commanders at all bases with KC-10 units also have C-17 units associated with them, and therefore have billets for Weapons Officers in their organization. The largest grouping of nine panel members (41%) did not attend a WIC, five attended the C-17 WIC (23%), four attended the C-130 WIC (18%) and four attended the KC-135 WIC (18%). A matrix of Round 2 questions and scores can be found in Appendix C.

Questions 6, 8, and 10 all addressed officer timelines. Scores were conditionally formatted in Microsoft Excel to show the highest scores in green and the lowest scores in red amongst the options for each particular question. Question 6 in Round 2 asked the panel what the ideal timeframe would be for a candidate to attend the WIC in order to maximize return on investment and developmental opportunities, and they were given Figure 2 (shown in Methodology section) as a visual aid to depict multiple timelines an officer could follow. The highest rated option from the panel and 8 of the 9 demographic categories was the 6 year TAFCSD. Only the O-6+ category disagreed, rating the 5 year TAFCSD highest. The 5 year TAFCSD was the panel's second highest rated option, and this trend continued through subsequent options indicating that the panel would prefer for candidates to attend earlier rather than later in their career. This is a good outcome because it shows high agreement amongst the panel. In practice however, this proves to be problematic as the current age of attending WUGS does not correlate with the panel's recommendation.

An analysis of 108 WUGs from the three MAF WIC incoming classes from 2012-2015 is shown below in Figure 6.

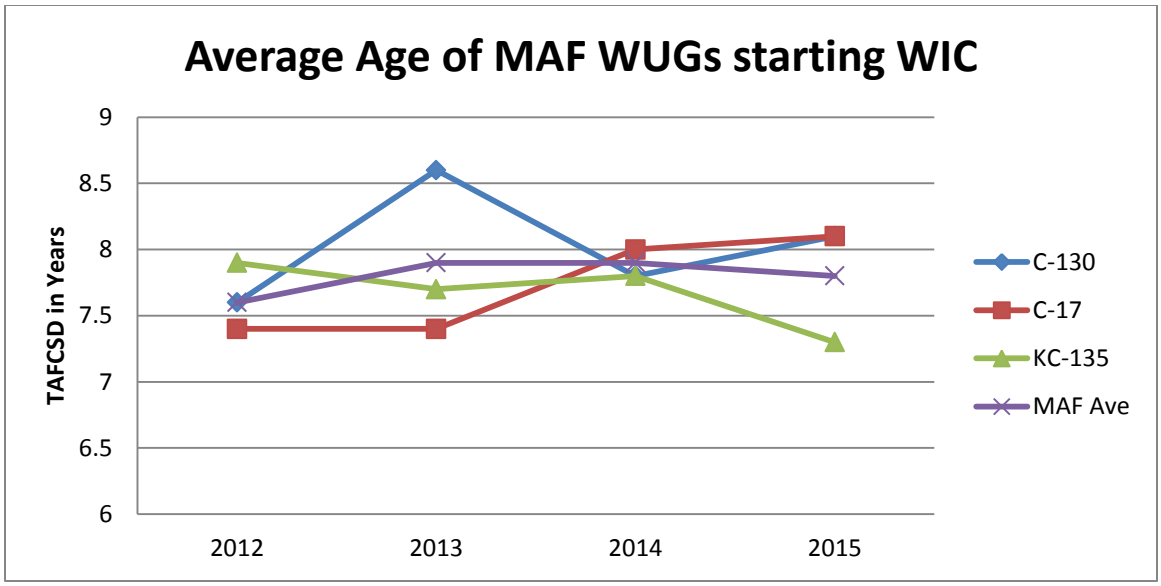


Figure 6: Average Age of MAF WUGs starting WIC

The average age of a WUG entering the MAF WIC over the last four years has been a 7.8 year TAFCSD. Although this seems like a large gap between the panel's chosen ideal timeframe of 6 years, the age of a CAF WUG is very similar to the 7.8 year timeframe.

A sample of CAF WUGs (F-16 WIC with a sample size of 15) in CY14 had an average age was 7.6 years. While they are slightly younger at entrance than MAF WUGs, the more compelling statistic is the standard deviation in the ages of the candidates. In CY14 for example, the standard deviation for MAF WUGs was 1.0 years; for F-16s the standard deviation was 0.3. With a standard deviation that small, one can argue that a much more deliberate method of placement for candidates attending a CAF WIC. An interview with the USAFWS Commandant confirmed that identification and grooming of candidates is very deliberate with the intention of sending CAF candidates to the WIC as quickly as possible after all qualifications are satisfied (Spain, 2014). Were the MAF to employ a more deliberate planning process in the identification

and preparation of their candidates, one must first ask if meeting a 6 year TAFCSD is an obtainable goal with current MAF instructor upgrade timelines.

Currently, all MAF WICs require WUGs have 50 hours of instructor time in their aircraft, and the C-130 and C-17 WICs require IP certification 6 months prior to their Course Start Date (CSD) (ACC/A3, 2015). In order to meet the ideal timeline proposed by the panel, candidates would have to complete instructor upgrade by the 6 year TAFCSD in order to be eligible at the 6.6 year point for the "Bravo" WIC class of that calendar year.

A sample of 48 active duty C-17 instructors from all bases was analyzed based on the initial instructor qualification completion date logged in the L3 Training Management System (TMS). Reserve and requalification candidates were removed to ensure sample integrity. Descriptive Statistics for the analysis are shown below in Figure 7.

C-17 Instructor Descriptive Statistics	
Mean	6.29
Standard Error	0.12
Median	6.14
Mode	None
Standard Deviation	0.83
Sample Variance	0.68
Kurtosis	1.19
Skewness	1.31
Range	3.28
Minimum	5.28
Maximum	8.56
Sum	301.78
Count	48.00

Figure 7: C-17 Instructor Qualification (in years TAFCSD) Descriptive Statistics

The average age of a C-17 pilot graduating from Instructor Aircraft Commander (IAC) upgrade is 6.29 years with a minimum age of 5.28. A similar analysis could not be performed for C-130 instructors due to lack of access to data, but consultation from the 714th Training Squadron at Little Rock Air Force Base, Arkansas confirmed a typical upgrade timeline of 5.5

years for C-130J instructor upgrade (Tingstrom, 2015). KC-135 upgrade timelines were calculated using the Automated Aircrew Management System (AAMS). The system takes real time flight hours from current aircrew members in AMC and compares them to a target aging rate that is calculated based on an average number of 260 hours received in Undergraduate Pilot Training (UPT) and an expected amount of flying hours per month which vary per airframe (Neilson, 2015). KC-135 pilots have a target aging rate of 20 hours per month. The generation of the scatterplot below in Figure 8 shows an expected time to IP upgrade for KC-135 pilots of 52 months, or 4.3 years from first flight in their aircraft. With an assumed timeline of 1.5 years to graduation from UPT, KC-135 pilots are expected to upgrade to IP at the 5.8 year TAFCSD.

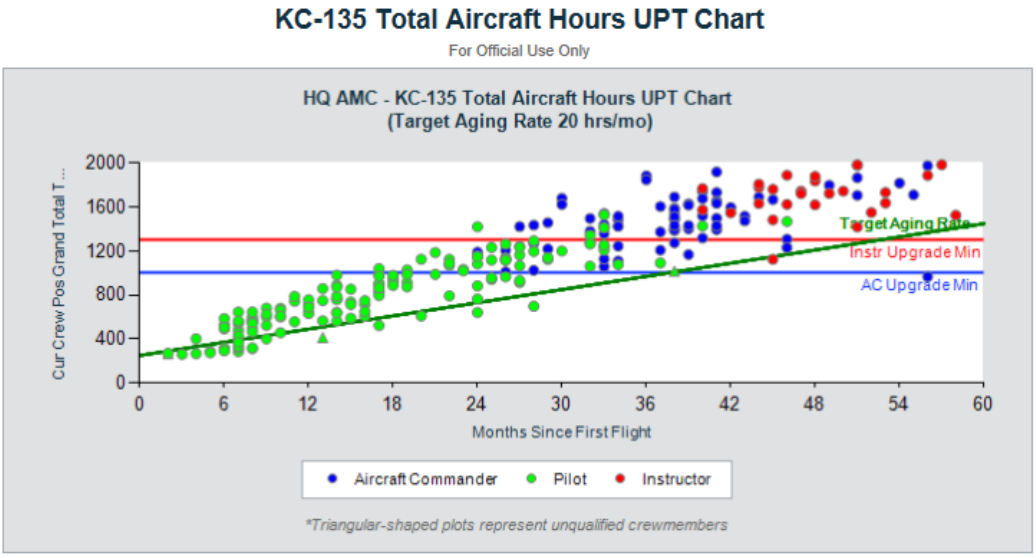


Figure 8: KC-135 Pilot Aging Scatterplot (AAMS, 2015)

Analysis shows that the 6 year TAFCSD is possible with current instructor upgrade timelines; even more promising is that the KC-135 and C-17 scatterplots show the majority of pilots above the target aging rate line. This indicates that pilots are gaining hours faster than the target aging rate and will meet the minimum requirements for instructor school earlier than

expected; however, meeting minimum requirements is not necessarily indicative of individual readiness for the responsibilities of an instructor. The analysis does support that meeting a desired timeline is possible for the right candidates. A targeted identification and selection process for instructor upgrade slots at the squadron level may be required in order to shift upgrade timelines closer to the recommended 6 year TAFCSD.

Question 8 found that respondents felt comfortable transitioning a WO from a Tier 1 position directly into a Tier 2 position. The panel also rated an above average sentiment towards the preference that a WO hold a non-tactics related role between tiered positions for development purposes. The majority of the panel was not comfortable using a WO as a Tactics Chief if they already served in that capacity. This sentiment could lead to utilization problems; 18% of all MAF candidates in CY14 previously held a squadron tactics chief position prior to WIC attendance; that number is double the CAF rate of 9% for the same year. More compelling, 100% of those same CAF WOs were placed into Tier 1 positions at the squadron level again. Meanwhile only 16% (1 of 6) MAF WOs was sent back to an operational squadron. The other 5 MAF WOs were outplaced into Tier 2 cadre, OSK, or executive officer positions.

In the final timeline question, Question 10, the panel rated the ideal age of a Chief of Wing Tactics (OSK) at Year 9 TAFCSD. This was the highest of all answer options given and the highest agreement amongst all respondent categories. This option aligns with the other options previously discussed in Questions 6 & 8. Combining all questions, the panel recommends an officer attend the WIC at the 6 year TAFCSD, fill a Tier 1 position in year 7, gain breadth experience in year 8, and return to a Tier 2 position in year 9. This would allow a Weapons Officer to fulfill their Tier 1 and Tier 2 obligations with the opportunity for a breadth

assignment and still remain eligible for IDE or a staff-level position on a similar timeline with their peers.

It must be noted that Figures 2 and 3 (reference page 20) depicted a promotion timeline, and therefore a PRF accountability date, in-line with outdated promotion guidance. The new timeline for promotion to Major beginning last year now has the PRF accounting date for an officer in their 9 year TAFCSD. The most popular option of a 6 year TAFCSD included the optional breadth assignment in the 8 year TAFCSD, in line with the officer's PRF accountability date. If the placement of a breadth assignment in year 8 was a contributing factor to the panel's choice, the optimal time for a candidate to attend the WIC may be different. Regardless of PRF accountability date, officers are still projected to promote to the rank of Major in the 10 year TAFCSD with the first opportunity to attend IDE in year 11. To achieve the maximum return on investment, however, proper squadron organization and post-graduate placement must be paramount.

A high preponderance (87%) of panel respondents from Round 1 reported that Tactics should be organized as a flight. When the panel was asked in Question 7 what position a WO should hold after graduation from the WIC, Squadron Tactics Flight Commander was the highest rated option. When asked in Question 9 what sections should reside under a Tactics flight, the only option rated above a 4.0 was Tactics, and the only other option rated above neutral was Intelligence. Therefore, although the panel agreed that Tactics should be organized as a flight, there was little agreement as to what sections to place under its responsibility. Similarly, viewpoints differed on the organization of Wing Tactics.

In regards to how strongly the panel felt about the organization of Wing Tactics under an OSS or directly under an Operations Group Commander, overall the panel rated organization

under an OG at 4.27 and under an OSS at 2.91. It should be noted that the panel did not have any Operations Group Commander participation and although there were OSS Commanders invited to participate, the author cannot confirm their presence in the panel due to anonymity. As a result, the two organizations which would be affected most by this change did not have a large voice in the outcome. In general, WIC graduates, those from airlift backgrounds and squadron commanders were more adamant about this proposed reorganization than non-WIC graduates, tankers, and Senior leaders. Regardless of where the office lies on the organizational ladder, it is the pinnacle tactical position a Weapons Officer can achieve at an operational wing. Given the requirement to move officers annually in order to gain a breadth of experience, positions should be identified in order to strike a balance between the utilization of an asset's skillset and their professional development.

Questions 12, 13 and 14 asked panel members to rate prospective jobs for WOs completing Tier 2 positions, but from differing viewpoints of utilization only, development only, and considering utilization and development equally. The most popular positions listed in Round 1 were: Operations Officer (DO), Assistant Operations Officer (ADO), Wing Staff (Executive Officer or Commander's Action Group), IG, Wing Training (OST) Chief, Wing Standardization and Evaluation (OGV) Chief, and Wing Plans Chief. The survey asked the same question three times to gain insight into the panel's subconscious tendencies. The true mathematical average of the scores for Questions 12 and 13 (where development and utilization were measured separately) were calculated and compared to the panel's scores for Question 14 (treating development and utilization equally). The largest difference in the true mathematical average and Question 14 scores was 0.2. Although seemingly insignificant, analysis showed that for the majority of options, the panel predominantly favored development over utilization when making

recommendations on WO job placement. Only the positions of IG and OST Chief trended towards utilization scores when analyzed. Analysis for Questions 12-14 and trend identification is shown below in Figure 9.

	Develop	Utilize	True Ave	Stated Ave	Delta	Trend
Operations Officer	4.19	4.33	4.26	4.19	0.07	D
ADO	3.81	4.00	3.91	3.80	0.11	D
Wing Staff (Exec/CAG)	4.29	3.38	3.84	3.95	-0.12	D
IG	3.25	2.95	3.10	2.90	0.20	U
OST Chief	3.62	3.57	3.60	3.58	0.01	U
OGV Chief	4.00	3.90	3.95	4.00	-0.05	D
Wing Plans Chief	3.71	3.86	3.79	3.67	0.12	D

Figure 9: Development vs. Utilization Analysis (D = Development, U = Utilization)

In rank order, the positions the panel rated above neutral for Weapons Officers who have completed their Tier 1 and Tier 2 positions (balancing utilization and development) were: Operations Officer, OGV Chief, Wing Staff, ADO, Wing Plans Chief and OST Chief. IG was the lowest rated position in all categories and was rated below neutral by the panel for Question 14; therefore, it was not included in final panel recommendations for Round 3. Not all Weapons Officers remain at an operational wing long enough to require a job after completing Tier 2 duties. Some attend IDE and are outplaced to a staff level position post-graduation. While some staff jobs are predicated on the school the officer attends, some positions may benefit more than others with the competencies a Weapons Officer gained in the Weapons School.

Question 15 asked the panel to rate the most common responses to the question, "What staff jobs do you think would best utilize a Weapons Officers skillset?" The Operations Directorate at all levels was rated higher than the Plans Directorate with COCOM Operations Directorate (J3) rated the highest. MAJCOM A3 was the second highest rated option. One could argue that this rating can be attributed to the fact that Tier 3 positions exist for Weapons Officers in the Combat Tactics Section of AMC (AMC/A3DT). Those positions act as

functional area managers for the Weapons Officer community. Another reason for the scoring of Operations Directorates over Plans Directorates could be the tendency to attribute the competencies of Weapons Officers to a tactical focus at operational wings. The competencies gained at the WIC do vary from those gained in other AMC special programs; an important insight to be gleaned is which competencies AMC values for its future leaders.

Question 16 asked the panel to rate the AMC identified special programs in regards to which they would recommend to young officers based on how they would like future commanders to be developed. Not originally encompassed in secondary questions, the researcher developed the question due to a common thread of discussions in Round 1. The intent was not to make a determination on one program's superiority, but to identify patterns of thought among various cultures. Scores from those cultures can provide a glimpse into their values. The overall panel mean rated the WIC the highest over the PHOENIX HORIZON programs and the Olmsted Scholar program. However, this could be anticipated because the majority of the panel was made up of WIC graduates: 13 compared to 9 non-WIC graduates. Expectedly, WIC graduates rated the WIC at 4.83 which swayed the overall panel average in favor of the WIC. But looking at non-WIC scores only, Olmsted scholar was the highest rated option, followed by PHOENIX REACH. The WIC was the second to last option for non-WIC graduates, the tanker community overall, and the lowest rated option for the KC-135 community. The WIC was the most popular option for the airlift community overall, C-17, C-130 and squadron commander categories. A large divergence of thought between cultures somewhere was expected, but to properly quantify the difference in relation to the rest of the panel's views, a normalization parameter was required.

Targeted Normalization Theory Analysis

As discussed in the Methodology section, the USAFWS Commandant's thoughts on breadth and depth were placed in Round 2 with the hypothesis that it would be a contentious topic, possibly leading to the largest difference in scores between cultures for the survey. The hypothesis proved accurate with this question scoring the highest divergence out of 204 possible permutations between cultures. The difference in scores between WIC graduates and non-WIC graduates was 2.14, and it was the largest difference between all cultures. WIC graduates posted their highest average score in the survey (4.92), and non-WIC graduates posted their 7th lowest score of (2.78). Using Equation 1, this becomes a 53.5% *Percent Delta*$_{MAX}$. While this question may not be the exact measure of how large a difference in thought the panel may achieve, the researcher believes it is closer than using an absolute spread on the Likert Scale of 4 points. This *Percent Delta*$_{MAX}$ (between WIC and non-WIC cultures) was used to normalize the all other scores to determine which differences in thought were truly significant.

Once *Percent Delta*$_{MAX}$ was determined, a *Targeted Normalization Score* was calculated for each option within each question. The culture subgroups compared for analysis were WIC / non-WIC, Tanker / Airlift, and O-5 / O-6+. The *Percent Delta* between cultures and *Targeted Normalization Scores* for the survey can be found in Appendix D. This score is now an easily readable format for analysis purposes. Scores can be viewed from the lens of a 0-10 scale: 0 is perfect agreement amongst a group and 10 would be equal to "how differently WIC graduates and non-WIC graduates feel about the subject of depth versus breadth" (essentially a normalized perfect disagreement). The majority of scores for the survey between all groups was relatively low. This is expected due to all of the previously listed commonalities between the panel members. The mean *Targeted Normalization Score* was 2.14 with a standard deviation of 1.76. This means that for this model, 95% of all scores fell within the range of 0.38 and 3.90.

Therefore, scores that fell outside of this range, above 3.90, displayed an inordinate divergence of thought between groups. Not including the comment from the USAFWS Commandant used to generate a targeted normalization score, 24 out of the 204 possible scores between the cultures fell above 3.90. The standard statistical method of a two-sample t-tail test of unequal variance was used to determine which differences were significant in order to verify Targeted Normalization Theory findings. 15 options in Round 2 were found to be statistically significant with a 95% certainty when comparing WIC graduate to non-WIC graduate responses. Most notable were the placement of specific sections under a tactics flight, the organization of wing tactics, the ideal age for a wing tactics chief, the use of Weapons Officers on a Wing Staff, and staff placement. T-tail analysis is shown in Figure 10.

NON WIC	Sections in a flight		OSK Chief Age		Where does OSK belong		Dev only	Jobs based on Utilization			Best Staff Job			Spec Pgms	Depth vs Breadth Statement
	Intel	copilots	7 yr TAFCSD	8 yr TAFCSD	In the OSS	OG	Wing Staff	DO	Wing Staff	Wing Staff	MAJCOM A5	HAF A3	HAF A5	WIC	
1	1	1	1	2	2	4	5	4	2	4	2	4	2	5	2
2	1	1	1	3	3	4	3	5	3	3	3	4	4	5	1
3	1	1	4	5	4	4	4	4	4	4	3	3	3	5	5
4	2	2	1	2	3	4	4	4	3	4	5	5	4	4	4
5	3	1	1	5	4	5	3	4	3	3	4	3	3	4	4
6	4	3	3	3	5	1	3	3	3	3	2	4	2	4	4
7	4	4			5	3	5	3	3	5	2	4	2	2	2
8	3	1	1	3	2	5	5	5	3	4	4	3	3	4	2
9	3	1	2	3	5	1	1	3	1	1	3	3	3	1	1
Average	2.44	1.67	1.75	3.25	3.67	3.44	3.67	3.89	2.78	3.44	3.11	3.67	2.89	3.78	2.78
Std Dev	1.24	1.12	1.16	1.16	1.22	1.51	1.32	0.78	0.83	1.13	1.05	0.71	0.78	1.39	1.48
WIC															
1	3	4	1	4	2	5	5	4	3	4	4	5	5	5	5
2	5	3	3	5	1	5	5	4	4	5	4	5	5	5	5
3	5	3			3	5	5	5	3	5	4	5	4	5	5
4	5	4	4	5	1	5	5	5	5	5	4	5	4	5	5
5	5	4	3	3	4	4	5	5	4	5	5	4	5	5	5
6	4	3	3	4	4	5	5	5	5	5	5	4	5	5	5
7	5	5	3	4	2	5	5	5	5	5	5	5	5	5	5
8	5	4	3	5	3	5	5	5	3	4	5	3	5	5	5
9	2		5	5	1	5	5	5	5	5	3	5	5	5	4
10	4	4	3	4	2	5									
11	5	3	4	5	3	5	5	5	4	4	4	3	5	5	5
12	3	4	2	4	2	5	3	3	2	2	4	5	4	3	5
Average	4.25	3.73	3.09	4.36	2.33	4.92	4.82	4.64	3.91	4.45	4.27	4.45	4.73	4.82	4.91
Std Dev	1.06	0.65	1.04	0.67	1.07	0.29	0.60	0.67	1.04	0.93	0.65	0.82	0.47	0.60	0.30
T-Test (2 tail)	0.002885	0.000346	0.021372	0.034923	0.019267	0.019187	0.034325	0.038023	0.014838	0.047919	0.012872	0.033259	0.000038	0.062554	0.002428

Figure 10: T-Tail Analysis of WIC and non-WIC respondents

Further examination showed that while some differences were statistically significant, both WIC and non-WIC graduates tended to agree on the trend of given options (i.e. either liked or disliked a given option); the difference was in how strongly each group felt. For example, both WIC and non-WIC graduates rated the 7 year TAFCSD as the lowest rated option of the grouping for the ideal age of Wing Tactics Chief. The T-Tail test shows this option as statistically significant though because non-WIC graduates scored this option much lower (1.75)

than WIC graduates (2.92). Instances where groups agree were omitted for analysis. The more compelling answers, such as instances where one group rated an option positively and one group rated it negatively, were evaluated. Topics that showed the largest divergence in thought were the placement of first assignment copilots into a section under a tactics flight, the reorganization of Wing Tactics directly under the OG, and the use of Weapons Officers in Plans Directorates. A differing opinion on the organization of Wing Tactics between WIC graduates and non-WIC graduates is not abnormal. Weapons Officers will place a higher value on the office and therefore would like its position elevated. Non-WIC graduates may not, and according to the score did not, place a high enough value on the office to warrant direct reporting to the Operations Group Commander. The reasoning for disparity on the other questions regarding sections in a flight and staff positions were not as transparent; therefore, additional feedback was requested from the panel in Round 3 about these topics.

Round Three Analysis

The panel from Round 3 totaled 16 participants. The demographical breakout of panel respondents included one General Officer (6.25%), four Colonels (25%), and 11 Lieutenant Colonels (68.75%). MWS breakdown consisted of nine C-17 (56.25%), three KC-135 (18.75%), and four C-130 (25%). The panel was asked to rate their level of concurrence for five final recommendations based on Round 2 survey data and a brief analysis of scores from the author. Final Survey results for Round 3 can be found in Appendix E. Mean Panel scores above a 4.0 were considered valid for inclusion as final recommendations because they fell between the Agree and Strongly Agree fields on the Likert Scale. Any deviations between cultures will be discussed under each recommendation.

In regards to the early identification and deliberate grooming of candidates in order to achieve an attendance age of 6 years TAFCSD, the panel scored the recommendation 4.31. Additionally, no demographical culture rated this recommendation below a 4.0 with the lowest score coming from the O-5 category at 4.18. From 1994 to today, the timing for achieving the rank of major has decreased by three years from the 12 year to the 9 year TAFCSD. The time required for a candidate to gain the requisite experience to succeed at the WIC has not decreased proportionately. In 1994, a tactics section was an acceptable position for an 8 year captain four years removed from a promotion board, but the same does not hold true in today's Air Force. With certain jobs required for advancement, particularly flight command prior to a Major's board, consideration must be given to the fact that organizational structures should have the capability to be as adaptive as the officers they lead.

The panel gave a score of 4.38 to the recommendation that operational flying squadrons should organize their tactics functions as a flight with sections to be determined by the Squadron Commander in order to achieve the squadron's required combat capabilities. All demographical cultures rated this recommendation at or above a 4.0 with the lowest score coming from the C-17 category at 4.0. The different platforms in the MAF vary greatly as do the mission sets. There may be no one panacea organizational structure to fit all needs. However, based on the experience and age of USAFWS graduates, and the proclivity for commanders to err on the side of the development of officers over utilization, a Tactics Flight Commander position is a natural fit to ensure graduates are being placed into appropriate Tier 1 positions post-graduation.

The panel agreed to the recommendation that Wing and Operations Group Commanders should consider reorganizing Wing Tactics directly under the Operations Group with a rating of 4.31. Both the Non-WIC and O-6 and above cultures rated this recommendation below a 4.0, but

their ratings were above a neutral score of 3.0. It should be noted that few panel participants were from the Operations Group level (2 or 13.33% for Round 3), and although Operations Support Squadron commanders were invited to participate in this survey, it is unknown how many participated. As a result, the two organizations most influenced by this recommendation may not have made a significant contribution to the finding. A larger and more appropriate sample size in future research would lend more credibility to this recommendation's validity. The next recommendation scored was a list of positions that commanders may consider for Weapons Officers at an operational wing after completing Tier 1 and Tier 2 positions: Operations Officer, OGV Chief, Wing Staff, ADO, Wing Plans Chief, and OST Chief. The intent of this recommendation is to give commanders a list of positions that would balance the utilization of a WOs skillset while providing opportunity for development. Overall, the panel scored the recommendation a 4.31 and all cultures scored this recommendation above a 4.0. With the importance of many of these positions, the recommendation should be considered as long as the individual meets the commander's prerequisites, and their personality and background meet their vision for that position.

The final recommendation was for data from this study to be included in a briefing on the utilization and development of Weapons Officers at the AMC Squadron Commander's course. The panel gave a score of 4.38 to this recommendation. The Non-WIC and C-17 cultures had an average rating below a 4.0, but above a neutral score of 3.0. One panel member rated this recommendation a Strongly Disagree (1.0). It should be noted that due to small panel dynamics, the Non-WIC and C-17 cultures averaged below a 4.0 due to this singular vote.

Additional questions were posed to the panel based on a large, statistically significant divergence in scores for two topics: the placement of Weapons Officers in Plans Directorates and

the placement of training, intelligence and first-assignment copilots under a tactics flight. In terms of staffing positions, a representative statement from the group was that the operations directorate was a natural fit for WOs because of their operational background and expertise. Those in favor of other positions noted the natural progression of an officer from a tactical to an operational planning mindset and their background would lend well to that type of progression.

WIC graduates were largely in favor of placing training functions into a tactics or similarly named flight, citing the instructor experience gained during WIC attendance as a valuable commodity that could be disseminated to a squadron. Those opposed to the idea generally framed Weapons Officers as specialists in tactics, and they may too heavily influence training away from other non-tactics related areas of importance.

The question asking commanders to rate special programs was reevaluated due to the release of a new PHOENIX HORIZON CONOPS between Rounds 2 and 3 of this study. The PH-T program was added as an additional option for rating in Round 3. As in Round 2, WIC held the highest panel average; however, the panel again held a preponderance of WIC graduates. 11 WIC graduates and 5 Non-WIC graduates participated in Round 3. Non-WIC participants again chose Olmsted Scholar as the highest rated option, followed by PH-T; WIC was tied for the lowest rating along with PH-R at 3.80. Again, the raw data from this question demonstrates that values differ among various MAF cultures.

Percent Deltas were calculated in Round 3 and normalized using the same methodology as in Round 2. The mean normalized score was 2.31 with a standard deviation of 2.0, creating upper and lower bounds of 4.31 and 0.31 respectively. Four areas fell outside of one standard deviation. The highest normalized score (7.6) was the differing thoughts between WIC and non-WIC graduates on organizing Wing Tactics directly under the Operations Group. The same

cultures also had a high disagreement on this research being offered at the AMC Squadron Commander's Course (5.3) and on recommending the WIC as a special program to officers (5.6). Finally, there was a large difference in opinion on recommending PH-R as a special program between the tanker and airlift community (6.2). The tanker community generally valued PH-R more than the airlift community with scores of 4.33 and 3.0 respectively.

Chapter Summary

This study attempted an unbiased approach to gain insights from commanders inside and outside of the Weapons Officer community. Major findings included a general desire for commanders to send candidates to the WIC in their 6 year TAFCSD, the organizational structure for tactics offices to be at the flight level, a desire to review the level at which a wing tactics office resides, recommended positions in the wing that can leverage a WOs skillset, and the inclusion of a briefing on the findings of this research for incoming commanders at the AMC Squadron Commander's Course. Further analysis of current student ages and typical upgrade timelines to meet minimum eligibility requirements show that it is possible to meet the desired 6 year timeline, but deliberate planning similar to CAF students is required to meet those objectives. As expected, panel members from different backgrounds think differently about this problem, and those differences in opinion are described using Targeted Normalization Theory. This theory exhibits that different cultures do exist within the MAF, each with unique values and lines of thought. One of the most significant divergences in thought focused around the Weapons Officer's role in the training functions of a squadron. Generally speaking, WIC graduates agreed that WOs should be involved in the training functions of a squadron while non-WIC graduates did not share that opinion. Despite several differences, the panel agreed upon five statements as final recommendations. They are outlined in the following section.

V. Conclusions and Recommendations

Summary of Research

In this study, a final panel of 16 MAF Commanders from various levels of command completed three surveys regarding the future development and utilization of Weapons Officers in the MAF. Panel demographics for all three rounds are shown below in Table 1.

Table 1: Delphi Panel Demographics

Panel Demographics											
Round	Total Participants	Rank				WIC Status		Airframe			
		O-4	O-5	O-6	O-7	WIC Grads	Non-WIC	C-17	C-130	KC-135	KC-10
Round 1	34	2	20	11	1	21	13	≥8	≥8	≥5	1
Round 2	22	0	14	7	1	13	9	9	5	7	1
Round 3	16	0	11	4	1	11	5	9	4	3	0

Of note, the researcher did not specifically ask participants to identify their primary MWS in Round 1. The numbers for airframe listed above in Round 1 only include the number of Weapons Officer participants that graduated from that particular WIC. The primary MWS of non-WIC participants in Round 1 was not captured; therefore, a greater than or equal to symbol is displayed.

Based on qualitative input from Round 1, the panel quantitatively scored their most popular responses in Round 2. In Round 3, they rated a level of concurrence with drafted final recommendations based on Round 2 scores and analysis presented by the author. The panel agreed to several final recommendations including:

1. High Potential candidates for the WIC should be identified as early as possible and, although individual circumstances may vary, deliberately groomed with a target goal of attendance within their 6 year TAFCSD. This timeline will allow for a maximum return on investment while allowing the individual the flexibility for additional follow-on development opportunities.

Although a myriad of options exist, some possibilities befitting the aforementioned timeline are shown for reference in Figure 11.

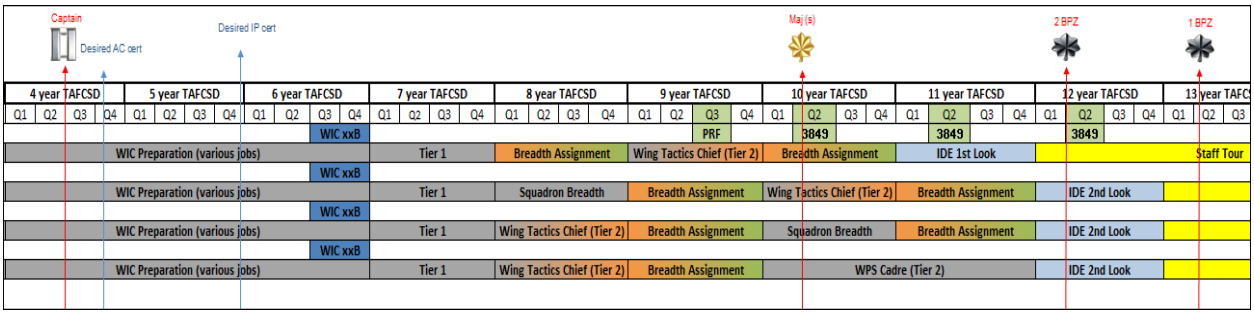


Figure 11: Possible WO timelines based on 6 year TAFCSD WIC Attendance

2. Operational flying squadrons should organize tactics functions as a flight, preferably led by a Weapons Officer with duties and responsibilities commensurate to a flight commander, with sections determined by the squadron commander in order to achieve the squadron's required combat capabilities.

3. Wing and Operations Group Commanders should consider reorganizing Wing Tactics functions directly under the Operations Group to streamline AFI 11-415 reporting requirements and provide appropriate access to Senior leadership regarding the combat capability of their units.

4. Assuming officers meet all qualifications and desired characteristics for the positions listed, Weapons Officers at operational wings should be considered for the following positions after completing Tier 1 and Tier 2 obligations. These positions provide a balance between the utilization of a Weapons Officer's skillet and professional development:

   Operations Officer, OGV Chief, Wing Staff, ADO, Wing Plans Chief, OST Chief

5. A briefing on the utilization and development of Weapons Officers in the MAF based on panel recommendations from this study would be beneficial for incoming squadron commanders at the AMC Squadron Commander's Course

Additionally, this research demonstrated that different cultures within the MAF possess differing values and thoughts. There was a large divergence of thought between cultures on several

topics, most notably the opposing views of WIC graduates and non-WIC graduates on the placement of sections such as Training and first-assignment copilots under a Tactics Flight. From this, one may infer that commanders not coming from a WIC background generally tend to value Weapons Officers more as experts related specifically to tactical operations.

Combat Employment Flight

For commanders open to the possibility of combining additional functions beyond tactics into a flight, the following notional construct of a Combat Employment flight is shown below with advantages and disadvantages listed for consideration. This construct was made based on a representative sample of inputs from proponents of tactics flights having a larger influence on training in an operational squadron.

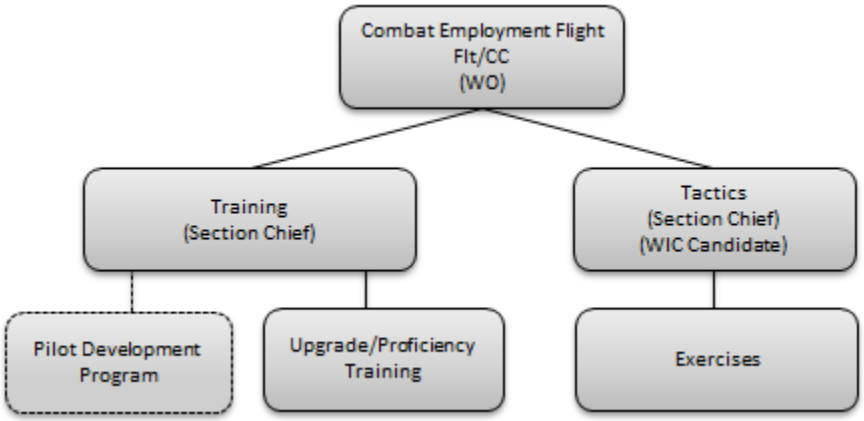


Figure 12: Notional Combat Employment Flight

This notional Combat Employment Flight could consist of Training and Tactics sections. The flight commander would be filled by a Weapons Officer and section chiefs would preferably be experienced instructors. To alleviate workload and allow the flight to focus on development of training programs and upgrade of aircrew members, accounting for continuation training

requirements could be transferred to readiness and/or scheduling offices as necessary. Finally, a section for first-assignment pilots, denoted by dashed lines (due to their transitory nature), could fall under the training section until pilots are mission ready. This section could also include first-assignment enlisted aircrew at the discretion of the commander. Once qualified, pilots can transition from the Pilot Development Program section into a different section in the squadron to gain breadth and distribute manpower across the squadron as needed.

This construct would conform to AMCI 11-207 requirements for inspection purposes and allow a position for potential WIC candidates to build credibility as a Tactics section chief while maintaining the flexibility to allow a newly minted WO to enter a Tier 1 flight command position post-graduation. Additionally, this format would meet several regulatory requirements for a squadron level tactics shop regarding their responsibility for training. This format also addresses a separate issue within the tactics community regarding availability of training. According to AMCI 11-207 (2011), the Chief of Tactics should be a WO, but at a minimum must be an instructor that has attended Combat Aircrew Tactics Studies/Mobility Electronic Combat Officers Course (CATS/MECOC) at the Advanced Airlift Tactics Training Center (AATTC). The training gained at AATTC is invaluable preparation for the WIC. However, due to demand for training consistently exceeding available seats (Markwart, 2015), the CATS/MECOC course is prioritized for current Tactics Chiefs and units that have an upcoming inspection (AATTC registrar, 2015). When a tactics office is only a section, this will create an infinite loop scenario: the CATS/MECOC is desired to go to the WIC, but space is limited to the point where only Tactics Chiefs can receive the training, and WIC graduates are expected to return to the squadron as a Tactics Chief where their designation as a WO supplants CATS/MECOC training. A new organizational structure would allow a WIC candidate to attend CATS/MECOC at the desired

time and allow a WO to return to an operational unit in a leadership role over the Chief of Tactics.

Panel members noted several concerns with aligning training and tactics under a similar flight. A shift away from non-tactics events could be an unintended consequence based on the personality of the individual leading the flight. Training has enough requirements within a squadron to make up their own flight, and a separation of duties (namely the tracking of continuation training) may be necessary for this new flight to focus on proficiency and upgrade training. Additionally, partitioning continuation and upgrade training between sections may become problematic if processes are not sound.

As demonstrated in the survey results, some commanders may feel that placing training and tactics functions together places an excessive burden on just one flight. Therefore, Figure 13 shows a construct with separate Tactics and Training Flights.

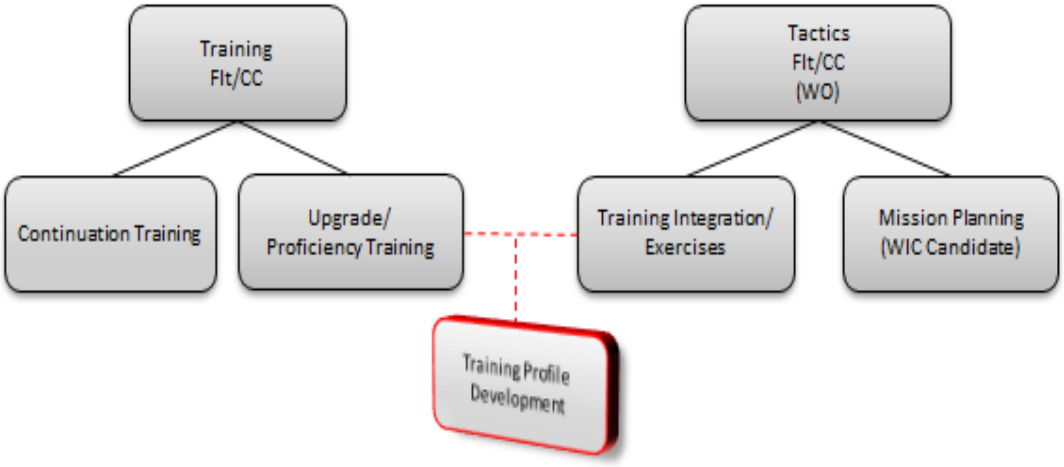


Figure 13: Notional Tactics and Training Flight Integration

In this organization, the training office remains a separate entity, but sections exist in both the tactics and training flights to work together on developing integrated scenarios that prepare the unit for its current and *anticipated* mission requirements. This is advantageous

because it spreads a host of responsibilities across flights and allows continuation training monitoring under the purview of the training flight. This structure could become problematic however if increased operational requirements levied on the squadrons left offices minimally manned; training profile development would require coordination between two manned offices in differing flights.

There is an adage that states, "Tactics drives Training drives Evaluations". The reasoning is that when our forces meet an unknown adversary, tactics must be developed to counter any postured threat. Once validated and determined that specific tactics should be employed, training programs are developed to teach and hone those necessary skills. Finally, an evaluation program is put into place in order to determine if the training program is sufficient for airmen to learn a desired skillset. These two notional organizational structures are by no means the only way to address the relationship between tactics and training. Any variation could suffice as long as the commander sees value in a Weapons Officer's contribution to the development of training profiles to further the employment capabilities of the unit.

All Models Are Wrong, Some Are Useful

This adage is one of the most valuable insights one can keep in mind when assessing recommendations, and it holds especially true when analyzing the management of human capital. This is because individual circumstances are so unique that no one exact mold can be universally applied. An Airman's development will vary greatly based on factors such as motivation, potential, prior experience and future timing. Therefore, the following recommendations should be viewed as an initial glideslope to begin the targeted development process of potential candidates. Similar to mission briefings, objectives and tactics to achieve them are first laid out under perfect conditions. Contingencies are certainly expected and planned for extensively, but

an initial plan must exist before any deviations are to be considered. Often, those deviations in career planning come about because of timing.

Timing Matters

Quod erat demonstrandum. The MAF environment and culture differs from its counterparts in the CAF, and neither paradigm must mirror the other. To be effective in different core functions may require different environments. However, to gain the maximum return on investment AMC makes in creating Weapons Officers, knowing and operating effectively in that environment is paramount. An officer's timing involved with the completion of any special program and future development are inexorably linked. The USAFWS will always choose the most qualified candidates for the WIC, and justifiably so. Building a credible operational resume takes time and experience. Currently, that time required may place today's MAF WIC graduates in a position where developmental milestones conflict with the ability to ensure their unit's readiness. To strike a proper balance, this research is intended to provide situational awareness to commanders so that they may make deliberate shaping decisions for officers they identify as potential WIC candidates. Not all officers should be WO's or groomed accordingly; however, those with the desire and capability should be placed on a specified path as early as possible to create a mutually beneficial scenario for both the command and the officer.

Recommendations for Future Research

An additional burden that hampers the MAF from enabling WOs to their fullest potential is the Permanent Change of Station (PCS) process. Specific locations such as Formal Training Units and overseas locations place prohibitive personnel codes on individuals preventing their movement. This can become problematic when assets are needed in certain locations and cannot

move from a location where an excess exists due to these previously mentioned obstructions. Using this study as a basis, further research could define individuals based on characteristics and locations via requirements. An optimal routing program could then be developed using a stable marriage problem construct where couples are matched from a large pool of candidates based on the ideal combinations of individual desires (Hunt, 2004). Research could also be accomplished exploring avenues to interface with AFPC on the movement of Weapons Officers restricted from moving to locations of need due to these aforementioned personnel limitation codes.

This study involved the three Major Weapons Systems in the MAF that currently have a Weapons Instructor Course. However, within the past three years, several graduates from the KC-135 WIC have been intentionally cross-flowed into the KC-10 in order to build a tactical foundation for the community. Additionally, the KC-46 will reach Initial Operational Capability (IOC) by 2016, and the initial cadre for this aircraft may include Weapons Officers not only from the KC-135 community, but the MAF community at large. This research could provide the foundation to explore the development opportunities of cross-flowing WOs into airframes that do not currently have a Weapons Instructor Course in order to enhance the employment capabilities of those aircraft. Finally, it could be beneficial for further research to be conducted into the cultural differences between the CAF and MAF of their Weapons Officers in terms of job placement for effective utilization.

Recommendations for Action

At the AMC level, a program could possibly be created to facilitate the development of future WOs. The ability to go from one operational base to another in the same MWS is not a simple task given the host of requirements commanders must fill such as remotely piloted aircraft, pilot training instructors, MC-12 and Air Mobility Liaison Officer billets. If candidates

could be identified early enough in their career via some medium, AMC/A1 could assist those officers with follow-on assignments that would best prepare them for the WIC. An example follows specific to the C-17 community.

A brand new copilot arrives at a C-17 squadron without an airdrop mission but shows great potential and desire to attend the WIC. If identified early, AMC/A1 could facilitate their movement during the proper PCS timeline to an airdrop base and coordinate a copilot-airdrop initial qualification training course enroute to their gaining base.

This scenario is possible with squadron commander input only, but would be greatly enhanced with help from higher headquarters. AMC could also program funding or provide guidance for wings to program funds for TDYs specific to WUG preparation such as FLAG exercises or other tactically related courses. Another way to accelerate the preparation of future WUGs could be for headquarters to task wings with identified officers to participate in exercises in accordance with the AMC Commanders Apportionment and Allocation Plan (CAAP) (AMCI10-403, 2014). Currently, wings are given the option to participate in large exercises, but typically require the use of the aircraft allocated for training lines to participate. This can make participation difficult if the squadron has limited training line availability to meet flying currency requirements.

The final panel recommendation was the inclusion of information from this study into a briefing for the AMC Squadron Commander's Course. If such a briefing were delivered, a key point to emphasize should be that breadth in the MAF is a valued commodity. To fittingly leverage a Weapons Officer's capabilities, timelines and organizational structures should be considered to correspond to a unit's goals and the Weapons Officer's age, experience and leadership ability.

General Martin Dempsey (2012) released his views on mission command in a white paper as the conduct of operations through decentralized execution. He continues to say that subordinate leaders at all echelons exercise disciplined initiative and act independently to accomplish the mission. To paraphrase, let your people know your intent and allow them to adapt based on the situation they encounter to achieve mission success. His statement could not be more appropriate for this research involving human capital where every individual has distinctive circumstances. The author's hope is that this research is not taken as authoritative in nature; empowerment of commanders to make their own decisions for the betterment of their unit is paramount. It is the author's vision that cultural factors influencing MAF Weapons Officer development can continue to "take up residence in a climate that allows for growth and maturation" (Lewis, 2004).

We should always strive to achieve a more effective system; one that will ultimately strike the optimal balance between leveraging a Weapons Officer's capabilities and developing them into the future leaders we want them to become.

Glossary of Technical Terms

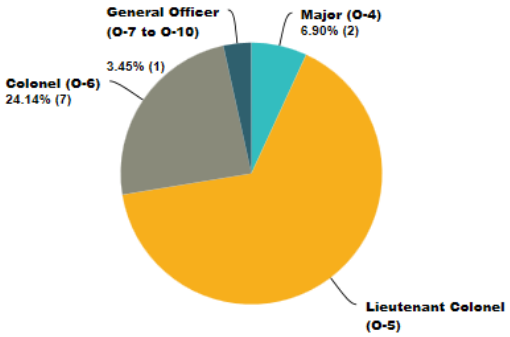
AAMS	Automated Aircrew Management System
ADO	Assistant Director of Operations
ADSC	Active Duty Service Commitment
AFPC	Air Force Personnel Center
AFSOC	Air Force Special Operations Command
AMC	Air Mobility Command
AMD	Air Mobility Division
AOC	Air Operations Center
ASG	Advanced Studies Group
CAAP	Commanders Apportionment and Allocation Plan
CAF	Combat Air Forces
COCOM	Combatant Command
CONEMP	Concept of Employment
CSD	Course Start Date
DO	Squadron Director of Operations
HAF	Headquarters Air Force
IAC	Instructor Aircraft Commander
IDE	Intermediate Developmental Education
IG	Inspector General
MAF	Mobility Air Forces
MAJCOM	Major Command
MDS	Mission Design Series
OCR	Office of Collateral Responsibility
OG	Operations Group
OGV	Wing Standardization and Evaluation Flight
OSK	Wing Tactics Flight
OSS	Operations Support Squadron
OST	Wing Training Flight
PCS	Permanent Change of Station
PRF	Promotion Recommendation Form
TAFCSD	Total Active Federal Commissioned Service Date
USAFWS	United States Air Force Weapons School
WIC	Weapons Instructor Course
WO	Weapons Officer
WUG	Weapons Undergraduate

Appendix A – Round One Analysis

Q1 Customize Export

What is your rank?

Answered: 29 Skipped: 0

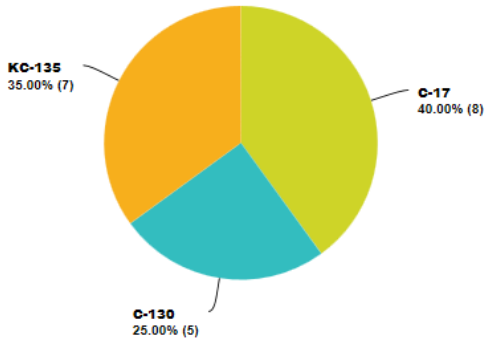


Answer Choices	Responses	
Captain (O-3)	0.00%	0
Major (O-4)	6.90%	2
Lieutenant Colonel (O-5)	65.52%	19
Colonel (O-6)	24.14%	7
General Officer (O-7 to O-10)	3.45%	1
Total		29

Q2 Customize Export

Which Weapons Instructor Course (WIC), if any, did you attend?

Answered: 20 Skipped: 9

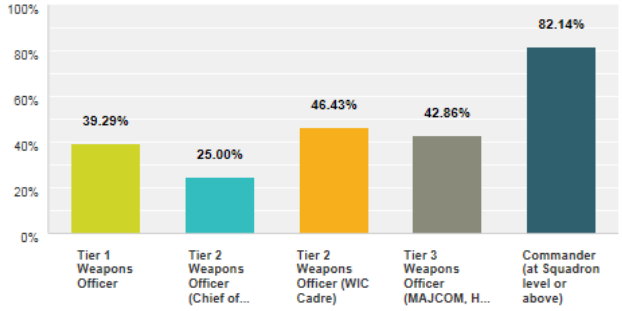


Answer Choices	Responses	
C-17	40.00%	8
C-130	25.00%	5
KC-135	35.00%	7
Total		20

Q3 Customize Export

Please select the duty positions you have held (please select all that apply)

Answered: 28 Skipped: 1

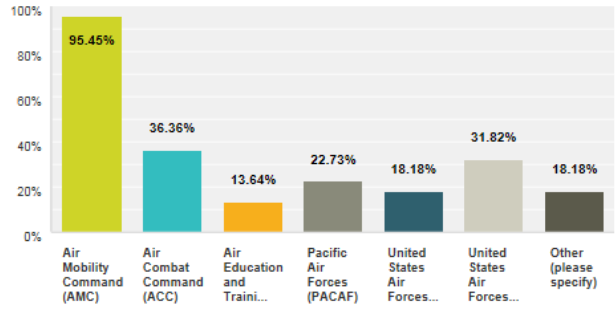


Answer Choices	Responses	
Tier 1 Weapons Officer	39.29%	11
Tier 2 Weapons Officer (Chief of Wing Tactics)	25.00%	7
Tier 2 Weapons Officer (WIC Cadre)	46.43%	13
Tier 3 Weapons Officer (MAJCOM, HAF, Joint, AOC Staff)	42.86%	12
Commander (at Squadron level or above)	82.14%	23
Total Respondents: 28		

Q4 Customize Export

Which Command(s) have you been assigned to as a Weapons Officer

Answered: 22 Skipped: 7



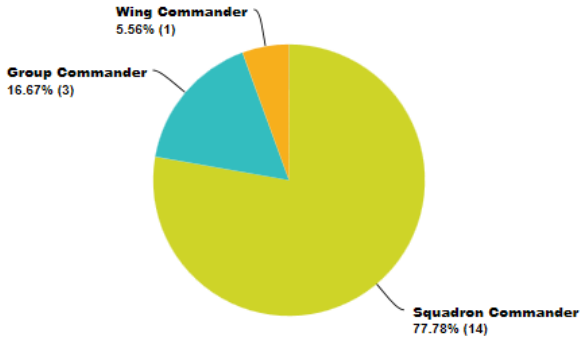
Answer Choices		Responses	
Air Mobility Command (AMC)		95.45%	21
Air Combat Command (ACC)		36.36%	8
Air Education and Training Command (AETC)		13.64%	3
Pacific Air Forces (PACAF)		22.73%	5
United States Air Forces in Europe (USAFE)		18.18%	4
United States Air Forces Central Command (AFCENT)		31.82%	7
Other (please specify)	Responses	18.18%	4
Total Respondents: 22			

Q5

Customize Export

If you are currently a Commander, please indicate your level of command

Answered: 18 Skipped: 11



Answer Choices	Responses	
Squadron Commander	77.78%	14
Group Commander	16.67%	3
Wing Commander	5.56%	1
I am a Commander, but I choose not to disclose the level	0.00%	0
Total		18

Comments (6)

Q6

Export

In terms of professional development, what should the progression of a Weapons Officer (WO) in the MAF look like? You may consider future/relevant job placement, schooling, timing, or any other factors you consider significant.

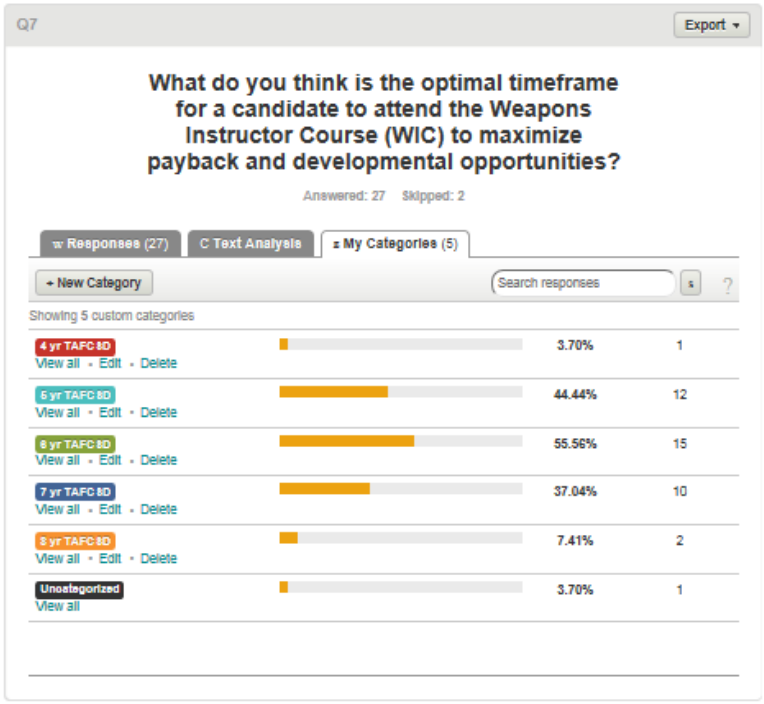
Answered: 27 Skipped: 2

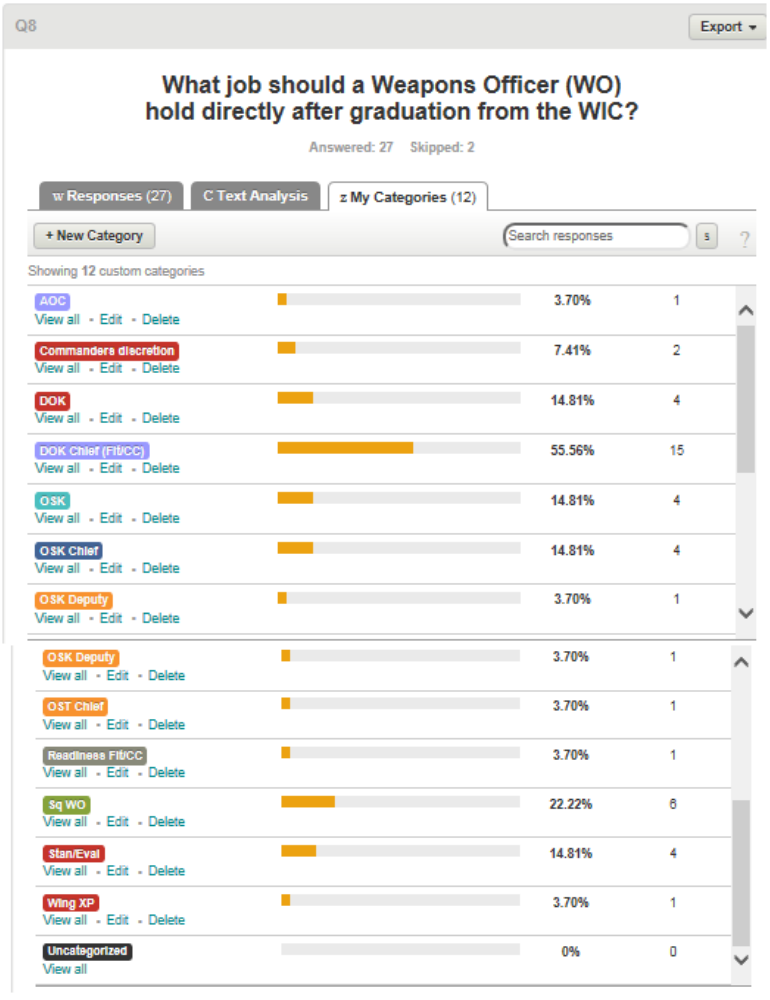
w Responses (27) C Text Analysis z My Categories (6)

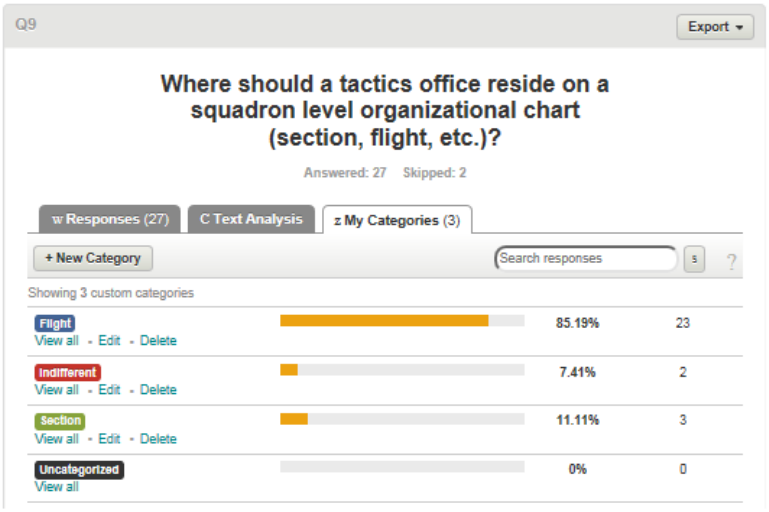
+ New Category Search responses

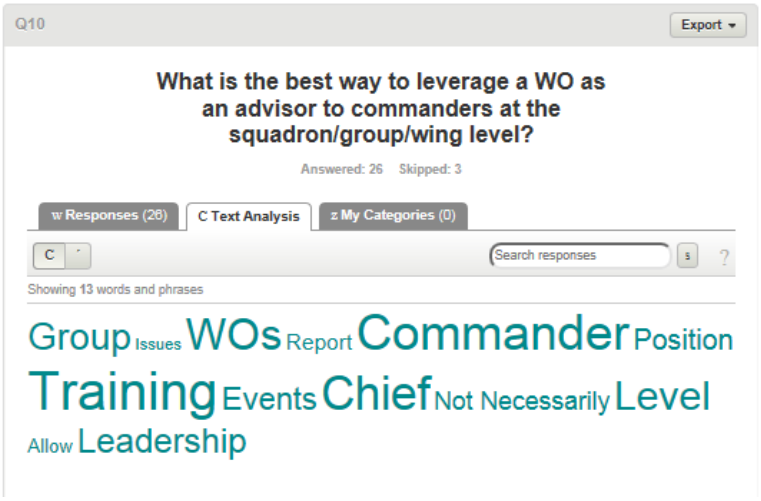
Showing 6 custom categories

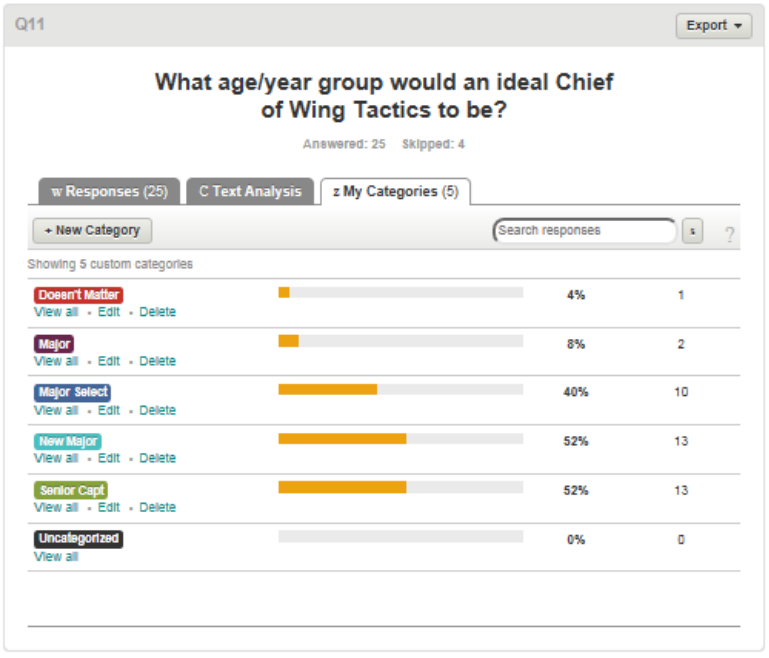
Breadth View all · Edit · Delete		55.56%	15
Don't develop WOs View all · Edit · Delete		3.70%	1
Jobs View all · Edit · Delete		66.67%	18
Organizational changes View all · Edit · Delete		7.41%	2
Timing View all · Edit · Delete		40.74%	11
WO Management View all · Edit · Delete		18.52%	5
Uncategorized View all		0%	0

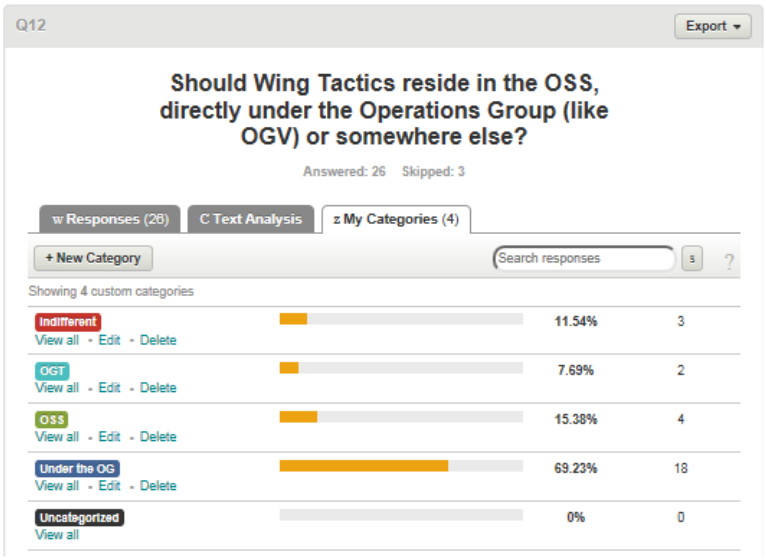

Q7
Export
What do you think is the optimal timeframe for a candidate to attend the Weapons Instructor Course (WIC) to maximize payback and developmental opportunities?
Answered: 27 Skipped: 2
w Responses (27)
C Text Analysis
z My Categories (5)
+ New Category
Search responses
Showing 5 custom categories
4 yr TAFC ßD
View all - Edit - Delete
3.70% 1
5 yr TAFC ßD
View all - Edit - Delete
44.44% 12
6 yr TAFC ßD
View all - Edit - Delete
55.56% 15
7 yr TAFC ßD
View all - Edit - Delete
37.04% 10
8 yr TAFC ßD
View all - Edit - Delete
7.41% 2
Uncategorized
View all
3.70% 1

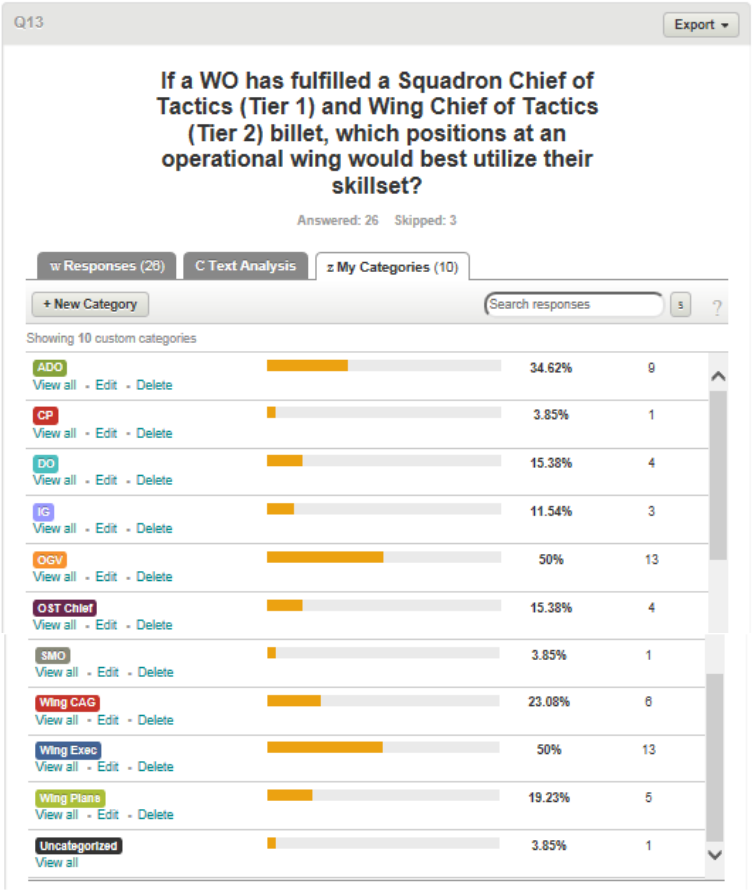

Q8
Export
What job should a Weapons Officer (WO) hold directly after graduation from the WIC?
Answered: 27 Skipped: 2
w Responses (27)
C Text Analysis
z My Categories (12)
+ New Category
Search responses
Showing 12 custom categories
AOC
View all - Edit - Delete
3.70% 1
Commanders discretion
View all - Edit - Delete
7.41% 2
DOK
View all - Edit - Delete
14.81% 4
DOK Chief (Flt/CC)
View all - Edit - Delete
55.56% 15
OSK
View all - Edit - Delete
14.81% 4
OSK Chief
View all - Edit - Delete
14.81% 4
OSK Deputy
View all - Edit - Delete
3.70% 1
OSK Deputy
View all - Edit - Delete
3.70% 1
OST Chief
View all - Edit - Delete
3.70% 1
Readiness Flt/CC
View all - Edit - Delete
3.70% 1
Sq WO
View all - Edit - Delete
22.22% 6
Stan/Eval
View all - Edit - Delete
14.81% 4
Wing XP
View all - Edit - Delete
3.70% 1
Uncategorized
View all
0% 0


Q9
Export
Where should a tactics office reside on a squadron level organizational chart (section, flight, etc.)?
Answered: 27 Skipped: 2
w Responses (27)
C Text Analysis
z My Categories (3)
+ New Category
Search responses
Showing 3 custom categories
Flight
View all - Edit - Delete
85.19%
23
Indifferent
View all - Edit - Delete
7.41%
2
Section
View all - Edit - Delete
11.11%
3
Uncategorized
View all
0%
0


Q10
Export
What is the best way to leverage a WO as an advisor to commanders at the squadron/group/wing level?
Answered: 26 Skipped: 3
w Responses (26)
C Text Analysis
z My Categories (0)
Search responses
Showing 13 words and phrases
Group Issues WOs Report Commander Position
Training Events Chief Not Necessarily Level
Allow Leadership


Q11
Export
What age/year group would an ideal Chief of Wing Tactics to be?
Answered: 25 Skipped: 4
w Responses (25)
C Text Analysis
z My Categories (5)
+ New Category
Search responses
Showing 5 custom categories
Doesn't Matter
View all - Edit - Delete
4%
1
Major
View all - Edit - Delete
8%
2
Major Select
View all - Edit - Delete
40%
10
New Major
View all - Edit - Delete
52%
13
Senior Capt
View all - Edit - Delete
52%
13
Uncategorized
View all
0%
0

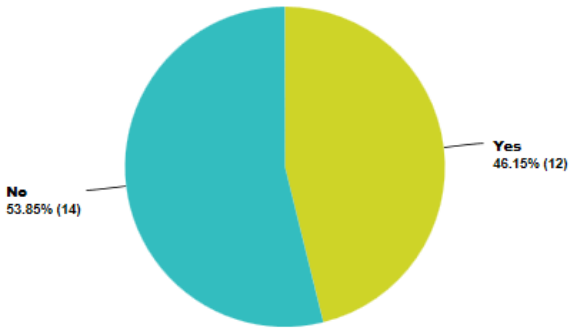

Q12
Export
Should Wing Tactics reside in the OSS, directly under the Operations Group (like OGV) or somewhere else?
Answered: 26 Skipped: 3
w Responses (26)
C Text Analysis
z My Categories (4)
+ New Category
Search responses
Showing 4 custom categories
Indifferent 11.54% 3
View all - Edit - Delete
OGT 7.69% 2
View all - Edit - Delete
OSS 15.38% 4
View all - Edit - Delete
Under the OG 69.23% 18
View all - Edit - Delete
Uncategorized 0% 0
View all


Q13
Export
If a WO has fulfilled a Squadron Chief of Tactics (Tier 1) and Wing Chief of Tactics (Tier 2) billet, which positions at an operational wing would best utilize their skillset?
Answered: 26 Skipped: 3
w Responses (26)
C Text Analysis
z My Categories (10)
+ New Category
Search responses
Showing 10 custom categories
ADO 34.62% 9
View all - Edit - Delete
CP 3.85% 1
View all - Edit - Delete
DO 15.38% 4
View all - Edit - Delete
IG 11.54% 3
View all - Edit - Delete
OGV 50% 13
View all - Edit - Delete
OST Chief 15.38% 4
View all - Edit - Delete
SMO 3.85% 1
View all - Edit - Delete
Wing CAG 23.08% 6
View all - Edit - Delete
Wing Exec 50% 13
View all - Edit - Delete
Wing Plans 19.23% 5
View all - Edit - Delete
Uncategorized 3.85% 1
View all

Q14 Customize Export

Does a WO need to complete an executive officer (or equivalent) tour in order to be competitive for future promotions and/or developmental opportunities?

Answered: 26 Skipped: 3



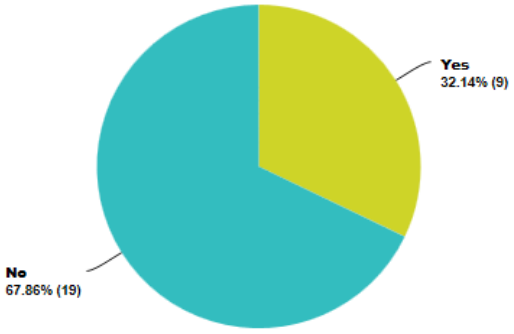
Answer Choices	Responses	
Yes	46.15%	12
No	53.85%	14
Total		26

Comments (20)

Q15 Customize Export

In general, should WOs be vectored towards specific in-residence Intermediate Developmental Education (IDE) schools?

Answered: 28 Skipped: 1



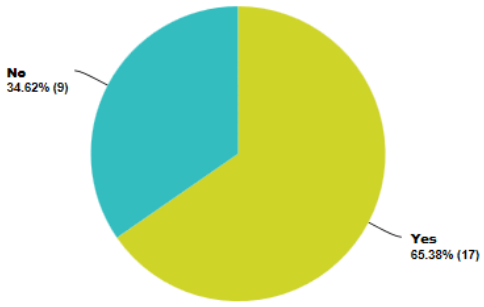
Answer Choices	Responses	
Yes	32.14%	9
No	67.86%	19
Total		28

Comments (17)

Q16 Customize Export

In general, should WOs attend an Advanced Studies Group (SAASS, SAMS, MAWS, SAW)?

Answered: 26 Skipped: 3



Answer Choices	Responses	
Yes	65.38%	17
No	34.62%	9
Total		26

Comments (20)

Q17 Export

What staff jobs do you think would best utilize a WOs skillset?

Answered: 25 Skipped: 4

w Responses (25) C Text Analysis z My Categories (13)

+ New Category Search responses

Showing 13 custom categories

A3 View all - Edit - Delete	48%	12
A3D View all - Edit - Delete	24%	6
A3T View all - Edit - Delete	12%	3
A3V View all - Edit - Delete	12%	3
A5 View all - Edit - Delete	40%	10
A8 View all - Edit - Delete	12%	3
A9 View all - Edit - Delete	8%	2
Any View all - Edit - Delete	16%	4
AOC Staff View all - Edit - Delete	8%	2
Exec View all - Edit - Delete	4%	1
J 5/8 View all - Edit - Delete	28.00%	7
J3 View all - Edit - Delete	36%	9
J4 View all - Edit - Delete	12%	3
Uncategorized View all	0%	0

Appendix B – Round Two Survey Questions

MAF Weapons Officer Development Survey Round 2

Survey Qualification

* 1. Did you participate in Round 1 of this survey?

- Yes
- No

2. What is your rank?

- Major (O-4)
- Lieutenant Colonel (O-5)
- Colonel (O-6)
- General Officer (O-7 to O-10)

3. Please select your Primary MWS

- C-130
- C-17
- C-5
- KC-10
- KC-135

4. Which Weapons Instructor Course (WIC), if any, did you attend?

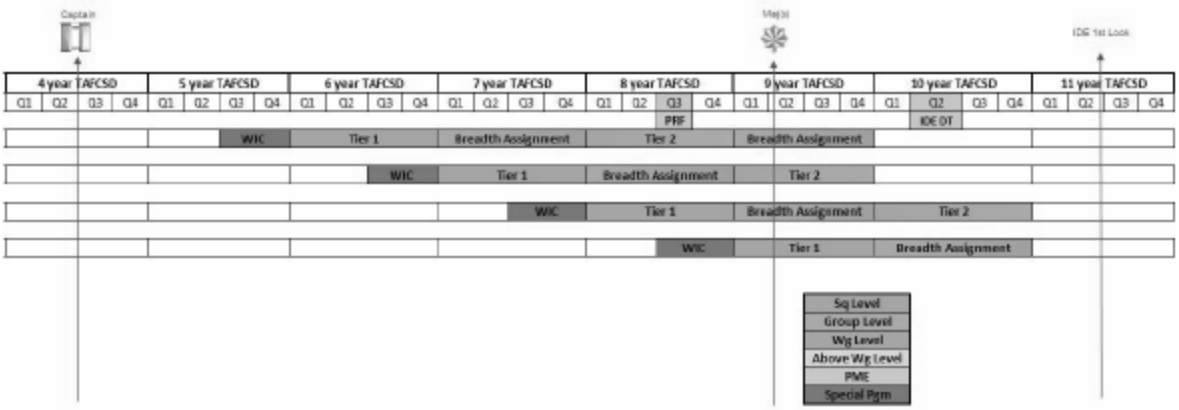
- C-130
- C-17
- KC-135
- I did not attend a WIC

5. If you are currently a Commander, please indicate your level of command

- Squadron Commander
- Group Commander
- Wing Commander

Other (please specify)

This is a hypothetical chart to aid in the visualization of Question 6 below. Multiple colors were used for Breadth and Tier 2 assignments to denote the multiple levels at which they may reside.



6. Please rate the top four responses for the question below:

What do you think is the optimal timeframe for a candidate to attend the Weapons Instructor Course (WIC) to maximize payback and developmental opportunities?

	1 (Least Desirable)	2	3	4	5 (Most Desirable)
5 year TAFCSD	○	○	○	○	○
6 year TAFCSD	○	○	○	○	○
7 year TAFCSD	○	○	○	○	○
8 year TAFCSD	○	○	○	○	○

Additional Comments (if desired)

7. Below are the top six responses for which job a Weapons Officer (WO) should hold directly after graduation from the WIC.

From the Squadron perspective, please rate your preferences as a Commander receiving a new graduate to your squadron.

	1 (Least Effective)	2	3	4	5 (Most Effective)
Squadron Tactics Section Chief	○	○	○	○	○
Squadron Tactics Flight Commander	○	○	○	○	○
Squadron WO	○	○	○	○	○
DOV Chief	○	○	○	○	○
Wing Tactics (other than Chief)	○	○	○	○	○
Wing Tactics Chief	○	○	○	○	○

Additional Comments (if desired)

8. Historically, many WIC applicants have already held the Squadron Tactics Chief position (expected Tier 1 outplacement) in order to become competitive for selection.

Please rate the following statements in your view as a commander:

	1 (Strongly Disagree)	2	3	4	5 (Strongly Agree)
I would feel comfortable using a new WO as a Sq Tactics Chief if they've already held that position	○	○	○	○	○
I would feel comfortable moving a WO from one tactics position directly into another tactics position (i.e. Sq Tactics Chief to Wing Tactics Chief)	○	○	○	○	○
I would prefer an officer hold a non-tactics related position between Tiered jobs for development purposes	○	○	○	○	○

Additional Comments (if desired)

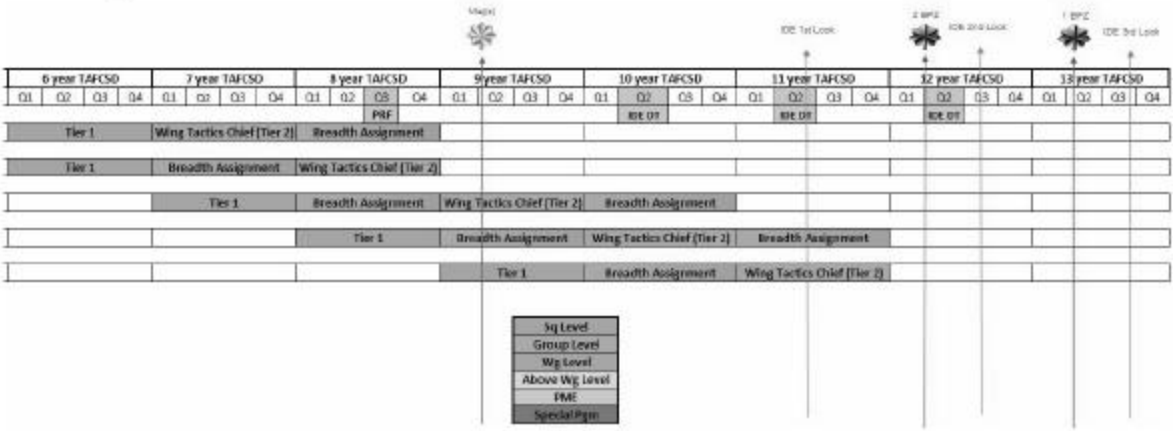
9. The majority of respondents from Round 1 (89%) agreed that Tactics should be organized as a Flight in an operational squadron. There were multiple ideas for sections to reside under a Tactics (or similarly named) flight.

Please rate what you feel would be the best sections to place in a Tactics flight under WO leadership.

	1 (Least Desirable)	2	3	4	5 (Most Desirable)
Training	○	○	○	○	○
Tactics	○	○	○	○	○
Readiness	○	○	○	○	○
Intel	○	○	○	○	○
A section for all first assignment copilots	○	○	○	○	○

Additional Comments (if desired)

This is a hypothetical chart to aid in the visualization of Question 10 below.



10. Please rate the top five responses for the question below:

What age/year group would an ideal Chief of Wing Tactics to be?

	1 (Least Desirable)	2	3	4	5 (Most Desirable)
7 yr TAFCSD (Capt)	○	○	○	○	○
8 yr TAFCSD (Capt in PRF year for Major)	○	○	○	○	○
9 yr TAFCSD (Major select)	○	○	○	○	○
10 yr TAFCSD (in "1st look" window for IDE)	○	○	○	○	○
11 yr TAFCSD or greater (Major)	○	○	○	○	○

Additional Comments (if desired)

11. The majority of respondents from Round 1 (67%) agreed that Wing Tactics should be organized under the Operations Group (similar to OGV).

Please rate how strongly you feel about Wing Tactics being aligned under the organizations below

	1 (Not at all)	2	3	4	5 (Very Strong)
In the OSS	○	○	○	○	○
At the OG level (similar to OGV)	○	○	○	○	○

Additional Comments (if desired)

The following three questions (Questions 12-14) ask the same question, but from different viewpoints. The requested perspective for you to frame your answer for each question is CAPITALIZED

12. Please rate the top seven responses to question below FROM THE STANDPOINT OF PROFESSIONAL DEVELOPMENT

If a WO has fulfilled a Squadron Chief of Tactics (Tier 1) and Wing Chief of Tactics (Tier 2) billet, which positions at an operational wing should they be placed?

	1 (Least Effective)	2	3	4	5 (Most Effective)
Operations Officer	○	○	○	○	○
ADO	○	○	○	○	○
Wing Staff (Exec/CAG)	○	○	○	○	○
IG	○	○	○	○	○
OST Chief	○	○	○	○	○
OGV Chief	○	○	○	○	○
Wing Plans Chief	○	○	○	○	○

Additional Comments (if desired)

13. Please rate the top seven responses to question below FROM THE STANDPOINT OF THE UTILIZATION OF A WOs SKILLSET

If a WO has fulfilled a Squadron Chief of Tactics (Tier 1) and Wing Chief of Tactics (Tier 2) billet, which positions at an operational wing should they be placed?

	1 (Least Effective)	2	3	4	5 (Most Effective)
Operations Officer	○	○	○	○	○
ADO	○	○	○	○	○
Wing Staff (Exec/CAG)	○	○	○	○	○
IG	○	○	○	○	○
OST Chief	○	○	○	○	○
OGV Chief	○	○	○	○	○
Wing Plans Chief	○	○	○	○	○

Additional Comments (if desired)

14. Please rate the top seven responses to question below CONSIDERING DEVELOPMENT AND UTILIZATION EQUALLY

If a WO has fulfilled a Squadron Chief of Tactics (Tier 1) and Wing Chief of Tactics (Tier 2) billet, which positions at an operational wing should they be placed?

	1 (Least Effective)	2	3	4	5 (Most Effective)
Operations Officer	○	○	○	○	○
ADO	○	○	○	○	○
Wing Staff (Exec/CAG)	○	○	○	○	○
IG	○	○	○	○	○
OST Chief	○	○	○	○	○
OGV Chief	○	○	○	○	○
Wing Plans Chief	○	○	○	○	○

Additional Comments (if desired)

15. Please rate the top six responses to question below:

What staff jobs do you think would best utilize a WOs skillset?

	1 (Least Effective)	2	3	4	5 (Most Effective)
MAJCOM A3	○	○	○	○	○
MAJCOM A5	○	○	○	○	○
HAF A3	○	○	○	○	○
HAF A5	○	○	○	○	○
COCOM J3	○	○	○	○	○
COCOM J5	○	○	○	○	○

Additional Comments (if desired)

16. Multiple respondents drew comparisons between different programs or paths that young officers could follow. Please rate the following AMC idenified special programs you would recommend to young officers based on how you would like a future Commander to be developed:

	1 (Not Recommend)	2	3	4	5 (Highly Recommend)
PHOENIX REACH	○	○	○	○	○
PHOENIX MOBILITY	○	○	○	○	○
WIC	○	○	○	○	○
Olmsted Scholar	○	○	○	○	○

Additional Comments (if desired)

17. During an interview about the development of Weapons Officers in the MAF, the Commandant of the USAF Weapons School made the following comment regarding the balance of depth and breadth:

"If you value the crossflow models (i.e. REACH and MOBILITY programs) for development, it seems you should also have officers in leadership positions to balance that breadth with a depth of expertise within your weapon systems. If you do not strike that balance, you may increase the potential for two possibilities to occur: risk aversion (leaders may be unwilling to accept risk because their background does not allow them to assess an acceptable level of risk) and unwitting risk acceptance (leaders that may unknowingly accept more risk than is necessary for the situation)."

Please rate your level of concurrence with this statement.

1 (Strongly Disagree)	2	3	4	5 (Strongly Agree)
○	○	○	○	○

Additional comments (if desired)

18. During an interview about the development of Weapons Officers in the MAF, the Commandant of the USAF Weapons School made the following comment regarding the balance of depth and breadth:

A counterargument [to the above statement] could also be made: excessive depth can lead to overconfidence in your ability to accept risk (take on too much risk, albeit knowingly) for a unit.

Please rate your level of concurrence with this statement.

1 (Strongly Disagree	2	3	4	5 (Strongly Agree)
○	○	○	○	○

Additional Comments (if desired)

19. THIS QUESTION IS FOR NON-WEAPONS OFFICERS ONLY:

Please rate your knowledge level about WOs as an incoming Squadron Commander in regards to:

	1 (Not very knowledgeable)	2	3	4	5 (Very knowledgeable)
Skillset (what can I use them for?)	○	○	○	○	○
Job placement	○	○	○	○	○
Future development	○	○	○	○	○

Additional Comments (if desired)

Appendix C – Round Two Analysis

	Panel Mean		WIC Grads	Non-WIC	Tankers	Airlift	C-17	C-130	KC-135	O-5	O-6
Question 6 - What is the optimal timeframe for a potential candidate to attend the WIC to maximize payback and developmental opportunities											
5 year TAFCSD	**3.71**		3.62	3.88	3.88	3.62	3.75	3.40	3.71	3.50	4.14
6 year TAFCSD	**4.30**		4.38	4.14	4.29	4.31	4.25	4.40	4.33	4.43	4.00
7 year TAFCSD	**3.62**		3.62	3.63	3.43	3.71	3.44	4.20	3.50	3.64	3.57
8 year TAFCSD	**2.25**		2.38	2.00	2.00	2.38	2.25	2.60	2.00	2.36	2.00
Question 7 - What is your preference for which job a Weapons Officer (WO) should hold directly after graduation from the WIC											
Squadron Tactics Section Chief	**3.90**		3.75	4.11	4.13	3.77	3.89	3.50	4.00	3.71	4.29
Squadron Tactics Flight Commander	**4.59**		4.69	4.44	4.25	4.79	4.67	5.00	4.29	4.71	4.38
Squadron WO	**3.68**		3.77	3.56	3.38	3.86	3.78	4.00	3.14	3.57	3.88
DOV Chief	**3.00**		3.25	2.67	2.75	3.15	3.75	2.20	2.57	3.08	2.88
Wing Tactics (other than Chief)	**3.36**		3.15	3.67	3.50	3.29	3.56	2.80	3.29	3.36	3.38
Wing Tactics Chief	**3.27**		3.31	3.22	3.13	3.36	3.78	2.60	3.00	3.36	3.13
Question 8 - Rate the following statements											
Comfortable using a WO as a Tactics Chief	**2.86**		2.50	3.33	3.29	2.64	2.22	3.40	3.33	2.46	3.50
Comfortable moving a WO from Tier 1 to a	**4.19**		4.42	3.89	4.29	4.14	4.11	4.20	4.17	4.31	4.00
Prefer a WO hold a breadth position	**3.60**		3.92	3.13	3.17	3.79	4.00	3.40	3.00	3.38	4.00
Question 9 - What would be the best sections to place in a Tactics flight under WO leadership											
Training	**2.86**		3.31	2.22	3.00	2.79	2.89	2.60	3.14	2.79	3.00
Tactics	**4.82**		4.69	5.00	4.88	4.79	4.67	5.00	4.86	4.71	5.00
Readiness	**2.27**		2.38	2.11	2.13	2.36	2.11	2.80	2.00	2.36	2.13
Intel	**3.55**		4.31	2.44	3.38	3.64	3.78	3.40	3.43	3.64	3.38
A section for all first assignment copilots	**2.86**		3.75	1.67	2.43	3.07	3.11	3.00	2.67	2.92	2.75
Question 10 - Ideal OSK Chief age											
7 yr TAFCSD (Capt)	**2.45**		2.92	1.75	2.57	2.38	2.75	1.80	2.83	2.62	2.14
8 yr TAFCSD (Capt in PRF year for Major)	**3.80**		4.17	3.25	4.14	3.62	4.13	2.80	4.33	4.00	3.43
9 yr TAFCSD (Major select)	**4.32**		4.31	4.33	4.25	4.36	4.44	4.20	4.14	4.21	4.50
10 yr TAFCSD (in "1st look" window for IDE)	**4.27**		4.00	4.67	4.00	4.43	4.33	4.60	3.86	4.07	4.63
11 yr TAFCSD or greater (Major)	**3.64**		3.46	3.89	2.88	4.07	4.00	4.20	2.71	3.36	4.13
Question 11 - How strongly do you feel that Wing Tactics should reside in the following organizations											
In the OSS	**2.91**		2.38	3.67	3.25	2.71	2.67	2.80	3.43	2.64	3.38
At the OG level (similar to OGV)	**4.27**		4.85	3.44	4.25	4.29	4.33	4.20	4.14	4.50	3.88
Question 12 - Development only											
Operations Officer	**4.19**		4.25	4.11	4.13	4.23	4.13	4.40	4.00	4.46	3.75
ADO	**3.81**		3.83	3.78	4.13	3.62	3.50	3.80	4.00	3.77	3.88
Wing Staff (Exec/CAG)	**4.29**		4.75	3.67	4.00	4.46	4.50	4.40	3.86	4.23	4.38
IG	**3.25**		3.67	2.63	2.63	3.67	3.25	4.50	2.71	3.25	3.25
OST Chief	**3.62**		3.92	3.22	3.75	3.54	3.75	3.20	3.86	3.38	4.00
OGV Chief	**4.00**		4.42	3.44	3.88	4.08	4.13	4.00	4.00	3.92	4.13
Wing Plans Chief	**3.71**		3.83	3.56	3.75	3.69	3.50	4.00	3.71	3.69	3.75
Question 13 - Utilization only											
Operations Officer	**4.33**		4.67	3.89	4.13	4.46	4.25	4.80	4.00	4.46	4.13
ADO	**4.00**		4.25	3.67	4.25	3.85	3.63	4.20	4.14	4.15	3.75
Wing Staff (Exec/CAG)	**3.38**		3.83	2.78	3.25	3.46	3.50	3.40	3.29	3.46	3.25
IG	**2.95**		2.92	3.00	2.88	3.00	3.13	2.80	2.86	2.38	3.88
OST Chief	**3.57**		3.83	3.22	3.88	3.38	3.63	3.00	4.00	3.38	3.88
OGV Chief	**3.90**		4.00	3.78	3.75	4.00	4.13	3.80	3.86	4.08	3.63
Wing Plans Chief	**3.86**		3.92	3.78	3.88	3.85	3.63	4.20	3.71	3.85	3.88
Question 14 - True Average of Development and Utilization											
Operations Officer	**4.26**		4.46	4.00	4.13	4.35	4.19	4.60	4.00	4.46	3.94
ADO	**3.91**		4.04	3.73	4.19	3.74	3.57	4.00	4.07	3.96	3.82
Wing Staff (Exec/CAG)	**3.84**		4.29	3.23	3.63	3.96	4.00	3.90	3.58	3.85	3.82
IG	**3.10**		3.30	2.82	2.76	3.34	3.19	3.65	2.79	2.82	3.57
OST Chief	**3.60**		3.88	3.22	3.82	3.46	3.69	3.10	3.93	3.38	3.94
OGV Chief	**3.95**		4.21	3.61	3.82	4.04	4.13	3.90	3.93	4.00	3.88
Wing Plans Chief	**3.79**		3.88	3.67	3.82	3.77	3.57	4.10	3.71	3.77	3.82
Question 14 - CONSIDERING DEVELOPMENT AND UTILIZATION EQUALLY If a WO has fulfilled a Tier 1 and Tier 2 billet, which positions at an operational wing should they be placed?											
Operations Officer	**4.19**		4.33	4.00	4.13	4.23	4.13	4.40	4.14	4.38	3.88
ADO	**3.80**		4.09	3.44	3.75	3.83	3.63	4.25	3.71	3.77	3.86
Wing Staff (Exec/CAG)	**3.95**		4.33	3.44	3.63	4.15	4.25	4.00	3.57	4.00	3.88
IG	**2.90**		3.08	2.67	2.50	3.15	3.25	3.00	2.57	2.54	3.50
OST Chief	**3.58**		3.91	3.13	3.86	3.42	3.63	3.00	4.00	3.45	3.75
OGV Chief	**4.00**		4.25	3.67	4.00	4.00	4.13	3.80	4.14	4.08	3.88
Wing Plans Chief	**3.67**		3.75	3.56	3.75	3.62	3.38	4.00	3.71	3.69	3.63

	Panel Mean		WIC Grads	Non-WIC	Tankers	Airlift	C-17	C-130	KC-135	O-5	O-6
Question 15 - What staff jobs do you think would best utilize a WOs skillset?											
MAJCOM A3	**4.19**		4.17	4.22	4.13	4.23	4.13	4.40	4.14	4.31	4.00
MAJCOM A5	**3.67**		4.08	3.11	3.63	3.69	3.88	3.40	3.57	3.92	3.25
HAF A3	**4.05**		4.33	3.67	3.75	4.23	4.38	4.00	3.86	4.23	3.75
HAF A5	**3.81**		4.50	2.89	3.75	3.85	4.00	3.60	3.86	4.15	3.25
COCOM J3	**4.57**		4.67	4.44	4.38	4.69	4.75	4.60	4.29	4.54	4.63
COCOM J5	**3.90**		4.25	3.44	3.75	4.00	4.00	4.00	3.57	4.23	3.38
Question 16 What pgm based on how I want a CC to be developed											
PHOENIX REACH	**3.62**		3.25	4.11	3.88	3.46	3.50	3.40	3.71	3.46	3.88
PHOENIX MOBILITY	**3.76**		3.83	3.67	3.50	3.92	4.13	3.60	3.57	3.46	4.25
WIC	**4.38**		4.83	3.78	3.63	4.85	4.75	5.00	3.57	4.46	4.25
Olmsted Scholar	**4.05**		3.75	4.44	4.13	4.00	4.25	3.60	4.14	3.92	4.25
Question 17 - Risk aversion Statement from USAFWS Commandant											
	4.00		4.92	2.78	3.50	4.31	4.75	3.60	3.71	4.00	4.00
Question 18 - Excess depth leads to overconfidence Statement from USAFWS Commandant											
	3.38		3.08	3.78	2.75	3.77	3.63	4.00	2.57	3.46	3.25
Question 19 - Please rate your knowledge level about WOs as an incoming Squadron Commander in regards to											
Skillset (what can I use them for?)	**4.73**		5.00	4.56	4.50	4.89	4.86	5.00	4.80	4.88	4.57
Job placement	**4.53**		4.67	4.44	4.17	4.78	4.71	5.00	4.40	4.50	4.57
Future development	**4.53**		4.67	4.44	4.17	4.78	4.71	5.00	4.20	4.38	4.71

Appendix D – Round Two Percent Delta Between Cultures

	Deltas between Cultures				Normalized to 53.5%		
	WIC / non-WIC	Tanker / Airlift	O-5 / O-6+		WIC / non-WIC	Tanker / Airlift	O-5 / O-6+
Question 6 - What is the Ideal Age to attend the WIC							
5 year TAFCSD	6.5%	6.5%	16.0%		1.2	1.2	3.0
6 year TAFCSD	6.0%	0.5%	10.8%		1.1	0.1	2.0
7 year TAFCSD	0.2%	7.0%	1.8%		0.0	1.3	0.3
8 year TAFCSD	9.5%	9.5%	9.0%		1.8	1.8	1.7
Question 7 - What is the Ideal Position for a Graduating WO							
Squadron Tactics Section Chief	9.0%	9.0%	14.5%		1.7	1.7	2.7
Squadron Tactics Flight Commander	6.3%	13.5%	8.3%		1.2	2.5	1.5
Squadron WO	5.3%	12.0%	7.8%		1.0	2.2	1.4
DOV Chief	14.5%	10.0%	5.0%		2.7	1.9	0.9
Wing Tactics (other than Chief)	13.0%	5.3%	0.5%		2.4	1.0	0.1
Wing Tactics Chief	2.3%	5.8%	5.8%		0.4	1.1	1.1
Question 8 - Rate the following statements							
Comfortable using a WO as a Tactics Chief	20.8%	16.3%	26.0%		3.9	3.0	4.9
Comfortable moving a WO from Tier 1 to a	13.3%	3.8%	7.7%		2.5	0.7	1.4
Prefer a WO hold a breadth position	19.8%	15.5%	15.5%		3.7	2.9	2.9
Question 9 - What would be the best sections to place in a Tactics flight							
Training	27.3%	5.3%	5.3%		5.1	1.0	1.0
Tactics	7.7%	2.3%	7.3%		1.4	0.4	1.4
Readiness	6.8%	5.8%	5.8%		1.3	1.1	1.1
Intel	46.8%	6.5%	6.5%		8.7	1.2	1.2
A section for all first assignment copilots	52.0%	16.0%	4.3%		9.7	3.0	0.8

	Deltas between Cultures				Normalized to 53.5%		
	WIC / non-WIC	Tanker / Airlift	O-5 / O-6+		WIC / non-WIC	Tanker / Airlift	O-5 / O-6+
Question 10 - Ideal OSK Chief age							
7 yr TAFCSD (Capt)	29.3%	4.8%	12.0%		5.5	0.9	2.2
8 yr TAFCSD (Capt in PRF year for Major)	23.0%	13.0%	14.3%		4.3	2.4	2.7
9 yr TAFCSD (Major select)	0.5%	2.8%	7.3%		0.1	0.5	1.4
10 yr TAFCSD (in "1st look" window for IDE)	16.8%	10.8%	14.0%		3.1	2.0	2.6
11 yr TAFCSD or greater (Major)	10.8%	29.8%	19.3%		2.0	5.6	3.6
Question 11 - How strongly do you feel that Wing Tactics should reside in the following							
In the OSS	32.3%	13.5%	18.5%		6.0	2.5	3.5
At the OG level (similar to OGV)	35.3%	1.0%	15.5%		6.6	0.2	2.9
Question 12 - Jobs for a post Tier 2 WO from a Development only standpoint							
Operations Officer	3.5%	2.5%	17.8%		0.7	0.5	3.3
ADO	1.3%	12.8%	2.8%		0.2	2.4	0.5
Wing Staff (Exec/CAG)	27.0%	11.5%	3.7%		5.0	2.1	0.7
IG	26.0%	26.0%	0.0%		4.9	4.9	0.0
OST Chief	17.5%	5.3%	15.5%		3.3	1.0	2.9
OGV Chief	24.5%	5.0%	5.3%		4.6	0.9	1.0
Wing Plans Chief	6.8%	1.5%	1.5%		1.3	0.3	0.3

	Deltas between Cultures				Normalized to 53.5%		
	WIC / non-WIC	Tanker / Airlift	O-5 / O-6+		WIC / non-WIC	Tanker / Airlift	O-5 / O-6+
Question 13 - Jobs for a post Tier 2 WO from a Utilization Standpoint							
Operations Officer	19.5%	8.3%	8.3%		3.6	1.5	1.5
ADO	14.5%	10.0%	10.0%		2.7	1.9	1.9
Wing Staff (Exec/CAG)	26.3%	5.3%	5.3%		4.9	1.0	1.0
IG	2.0%	3.0%	37.5%		0.4	0.6	7.0
OST Chief	15.3%	12.5%	12.5%		2.9	2.3	2.3
OGV Chief	5.5%	6.3%	11.3%		1.0	1.2	2.1
Wing Plans Chief	3.5%	0.7%	0.7%		0.7	0.1	0.1
Question 14 - True Average of Development and Utilization							
Operations Officer	11.5%	3.3%	5.4%		2.1	0.6	1.0
ADO	7.9%	11.6%	11.4%		1.5	2.2	2.1
Wing Staff (Exec/CAG)	26.6%	10.0%	8.4%		5.0	1.9	1.6
IG	12.0%	1.5%	14.5%		2.2	0.3	2.7
OST Chief	16.4%	14.9%	8.9%		3.1	2.8	1.7
OGV Chief	15.0%	5.1%	5.6%		2.8	1.0	1.1
Wing Plans Chief	5.1%	3.6%	1.1%		1.0	0.7	0.2
Question 14 - Jobs for a post Tier 2 WO considering Development and Utilization							
Operations Officer	8.3%	2.5%	12.5%		1.5	0.5	2.3
ADO	16.3%	2.0%	2.3%		3.0	0.4	0.4
Wing Staff (Exec/CAG)	22.3%	13.0%	3.0%		4.2	2.4	0.6
IG	10.3%	16.3%	24.0%		1.9	3.0	4.5
OST Chief	19.5%	11.0%	7.5%		3.6	2.1	1.4
OGV Chief	14.5%	0.0%	5.0%		2.7	0.0	0.9
Wing Plans Chief	4.8%	3.3%	1.5%		0.9	0.6	0.3

	Deltas between Cultures				Normalized to 53.5%		
	WIC / non-WIC	Tanker / Airlift	O-5 / O-6+		WIC / non-WIC	Tanker / Airlift	O-5 / O-6+
Question 15 - What staff jobs do you think would best utilize a WOs skillset?							
MAJCOM A3	1.3%	2.5%	7.7%		0.2	0.5	1.4
MAJCOM A5	24.3%	1.5%	16.8%		4.5	0.3	3.1
HAF A3	16.5%	12.0%	12.0%		3.1	2.2	2.2
HAF A5	40.3%	2.5%	22.5%		7.5	0.5	4.2
COCOM J3	5.7%	7.8%	2.3%		1.1	1.4	0.4
COCOM J5	20.3%	6.3%	21.3%		3.8	1.2	4.0
Question 16 - Rate these programs based on how you want a CC to be developed							
PHOENIX REACH	21.5%	10.5%	10.5%		4.0	2.0	2.0
PHOENIX MOBILITY	4.0%	10.5%	19.8%		0.7	2.0	3.7
WIC	26.3%	30.5%	5.3%		4.9	5.7	1.0
Olmsted Scholar	17.3%	3.3%	8.3%		3.2	0.6	1.5
Question 17 - Risk aversion Statement from USAFWS Commandant							
	53.5%	20.3%	0.0%		10.0	3.8	0.0
Question 18 - Excess depth leads to overconfidence Statement from USAFWS Commandant							
	17.5%	25.5%	5.3%		3.3	4.8	1.0
Question 19 - Knowledge level about WOs as an incoming Sq/CC in regards to:							
Skillset (what can I use them for?)	N/A	13.8%	8.7%		N/A	2.6	1.6
Job placement	N/A	20.0%	2.5%		N/A	3.7	0.5
Future development	N/A	20.0%	8.7%		N/A	3.7	1.6

Appendix E – Round Three Analysis

	Panel Mean		WIC Grads	Non-WIC	Tankers	Airlift	C-17	C-130	KC-135	O-5	O-6
RECOMMENDATION: Desired Age to attend the WIC is 6 yr TAFCSD											
Rating	**4.31**		4.27	4.40	4.33	4.31	4.33	4.25	4.33	4.18	4.60
RECOMMENDATION: Tactics should be organized as a flight with sections TBD by Squadron Commander											
Rating	**4.38**		4.45	4.20	5.00	4.23	4.00	4.75	5.00	4.36	4.40
RECOMMENDATION: Commanders should consider organizing Wing Tactics under OG											
Rating	**4.31**		4.82	3.20	4.33	4.31	4.22	4.50	4.33	4.55	3.80
RECOMMENDATION: The following jobs should be considered for WOs meeting prerequisites											
Rating	**4.31**		4.27	4.40	4.67	4.23	4.11	4.50	4.67	4.18	4.60
RECOMMENDATION: This information should be included in AMC Sq/CC Course											
Rating	**4.38**		4.73	3.60	5.00	4.23	3.89	5.00	5.00	4.36	4.40
Rate the following special programs based on how you want a CC to be developed											
PHOENIX HORIZON-REACH	**3.25**		3.00	3.80	4.33	3.00	3.00	3.00	4.33	3.27	3.20
PHOENIX HORIZON-MOBILITY	**4.06**		4.09	4.00	4.67	3.92	4.00	3.75	4.67	4.18	3.80
PHOENIX HORIZON-TORCH	**4.07**		3.80	4.60	4.33	4.00	4.13	3.75	4.33	4.10	4.00
WIC	**4.63**		5.00	3.80	5.00	4.54	4.44	4.75	5.00	4.55	4.80
Olmsted Scholar	**4.40**		4.20	4.80	4.50	4.38	4.56	4.00	4.50	4.60	4.00

	Panel Mean		Deltas between Cultures				Normalized to 53.5%		
			WIC / non-WIC	Tanker / Airlift	O-5 / O-6+		WIC / non-WIC	Tanker / Airlift	O-5 / O-6+
RECOMMENDATION: Desired Age to attend the WIC is 6 yr TAFCSD									
Rating	**4.31**		3.3%	0.5%	10.5%		0.6	0.1	2.0
RECOMMENDATION: Tactics should be organized as a flight with sections TBD by Squadron Commander									
Rating	**4.38**		6.3%	19.3%	1.0%		1.2	3.6	0.2
RECOMMENDATION: Commanders should consider organizing Wing Tactics under OG									
Rating	**4.31**		40.5%	0.5%	18.8%		7.6	0.1	3.5
RECOMMENDATION: The following jobs should be considered for WOs meeting prerequisites									
Rating	**4.31**		3.3%	11.0%	10.5%		0.6	2.1	2.0
RECOMMENDATION: This information should be included in AMC Sq/CC Course									
Rating	**4.38**		28.3%	19.3%	1.0%		5.3	3.6	0.2
Rate the following special programs based on how you want a CC to be developed									
PHOENIX HORIZON-REACH	**3.25**		20.0%	33.3%	1.8%		3.7	6.2	0.3
PHOENIX HORIZON-MOBILITY	**4.06**		2.3%	18.8%	9.5%		0.4	3.5	1.8
PHOENIX HORIZON-TORCH	**4.07**		20.0%	8.3%	2.5%		3.7	1.5	0.5
WIC	**4.63**		30.0%	11.5%	6.3%		5.6	2.1	1.2
Olmsted Scholar	**4.40**		15.0%	3.0%	15.0%		2.8	0.6	2.8

Optimizing the Weapons Officer in the Mobility Air Forces

Maj Christopher "BRINCS" Uhland
Advisor: Lt Col Joseph R. Huscroft, PhD
Advanced Study of Air Mobility (ENS)
Air Force Institute of Technology

Abstract

This graduate research paper analyzed potential recommendations commanders in the Mobility Air Forces (MAF) can implement to optimize the utilization of their Weapons Officers.

To accomplish an unbiased analysis, the researcher performed a Delphi Study of 34 officers of various ranks with command experience ranging from squadron to graduated wing command. Participant backgrounds included Weapons Instructor Course graduates and non-Weapons Officers with experience in multiple airframes to gain insights from commanders developed via "depth" and "breadth" cultures. Panel members shared their perceptions and insights over three survey rounds to determine ways for operational wings to utilize the skillset WOs develop at the USAF Weapons School and enable their development in a MAF culture that values officers with a breadth of experience.

The researcher also developed a "targeted normalization theory" to quantify cultural divergences of thought in a panel with many commonalities.

Targeted Normalization Theory

Targeted Normalization Theory attempts to give Senior Leaders a different way to visualize data for decision making purposes. It is based on the idea that panel members with commonalities (gender, age, background) generally will not rate options at opposite ends of a Likert scale. Determining a more accurate range of separation will can normalize responses for comparative analysis.

For this study, the panel was categorized into "cultures" and individual ratings were evaluated to find common divergences in thought.

Instead of presenting statistically significant differences in terms of generally accepted mathematical principles, it transforms them into a simple 0-10 system based on the equations below:

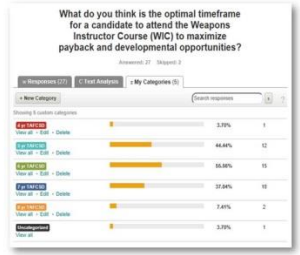
$$Percent\ Delta = \frac{|Mean_{WIC\ Grad} - Mean_{Non-WIC}|}{4}$$

*4 being the largest separation on a 5-point Likert Scale

$$Targeted\ Normalization\ Score = 10 * \left(\frac{Percent\ Delta}{Percent\ Delta_{MAX}}\right)$$

Panel Demographics

Round	Total Participants	Rank				WIC Status		Airframe			
		O-4	O-5	O-6	O-7	WIC Grads	Non-WIC	C-17	C-130	KC-135	KC-10
Round 1	34	2	20	11	1	21	13	≥ 8	≥ 8	≥ 5	1
Round 2	22	0	14	7	1	13	9	9	5	7	1
Round 3	16	0	11	4	1	11	5	9	4	3	0



	Deltas between Cultures				Normalized to 53.5%			
	WIC / non-WIC	Tanker / Airlift	O-5 / O-6+		WIC / non-WIC	Tanker / Airlift	O-5 / O-6+
Question 6 - What is the Ideal Age to attend the WIC							
5 year TAFCSD	6.5%	6.5%	16.0%		1.2	1.2	3.0
6 year TAFCSD	6.8%	0.5%	10.8%		1.1	0.1	2.0
7 year TAFCSD	0.2%	7.0%	1.8%		0.0	1.3	0.3
8 year TAFCSD	9.5%	9.5%	9.0%		1.8	1.8	1.7
Question 7 - What is the Ideal Position for a Graduating WO							
Squadron Tactics Section Chief	9.0%	9.0%	14.5%		1.7	1.7	2.7
Squadron Tactics Flight Commander	6.3%	13.5%	8.3%		1.2	2.5	1.5
Squadron WO	5.3%	12.0%	7.8%		1.0	2.2	1.4
OGV Chief	14.5%	10.0%	5.0%		2.7	1.9	0.9
Wing Tactics (other than Chief)	13.0%	5.3%	0.5%		2.4	1.0	0.1
Wing Tactics Chief	2.3%	5.8%	5.8%		0.4	1.1	1.1
Question 8 - Rate the following statements							
Comfortable using a WO as a Tactics Chief	20.8%	16.3%	26.0%		3.9	3.0	4.9
Comfortable moving a WO from Tier 1 to a	13.3%	3.8%	7.7%		2.5	0.7	1.4
Prefer a WO hold a breadth position	19.8%	15.5%	15.5%		3.7	2.9	2.9
Question 9 - What would be the best sections to place it in a Tactics flight							
Training	27.3%	5.3%	5.3%		5.1	1.0	1.0
Tactics	7.7%	2.3%	7.3%		1.4	0.4	1.4
Readiness	6.5%	5.8%	5.8%		1.3	1.1	1.1
Intel	46.0%	6.5%	6.5%		8.7	1.2	1.2
A section for all first assignment copilots	52.0%	16.0%	4.3%		9.7	3.0	0.8
Question 10 - Ideal OSK Chief age							
7 yr TAFCSD (Capt)	29.3%	4.8%	12.0%		5.5	0.9	2.2
8 yr TAFCSD (Capt in PRF year for Major)	23.0%	13.0%	14.3%		4.3	2.4	2.7
9 yr TAFCSD (Major select)	9.5%	2.8%	7.3%		1.1	0.5	1.4
10 yr TAFCSD (in "1st look" window for IDE)	16.8%	10.8%	14.0%		3.1	2.0	2.6
11 yr TAFCSD or greater (Major)	10.8%	29.8%	19.3%		2.0	5.6	3.6
Question 11 - How strongly do you feel that Wing Tactics should reside in the following:							
In the OSS	32.3%	13.5%	18.5%		6.0	2.5	3.5
At the OG level (similar to OGV)	35.3%	1.0%	15.5%		6.6	0.2	2.9
Question 12 - Jobs for a post Tier 2 WO from a Development only standpoint							
Operations Officer	3.5%	2.5%	17.8%		0.7	0.5	3.3
ADO	1.3%	12.8%	2.8%		0.2	2.4	0.5
Wing Staff (Exec/CAG)	27.0%	11.5%	3.7%		5.0	2.1	0.7
IG	26.0%	26.0%	0.0%		4.9	4.9	0.0
OST Chief	17.5%	5.3%	15.5%		3.3	1.0	2.9
OGV Chief	24.5%	5.0%	5.3%		4.6	0.9	1.0
Wing Plans Chief	6.8%	1.5%	1.5%		1.3	0.3	0.3

	Deltas between Cultures				Normalized to 53.5%			
	WIC / non-WIC	Tanker / Airlift	O-5 / O-6+		WIC / non-WIC	Tanker / Airlift	O-5 / O-6+
Question 13 - Jobs for a post Tier 2 WO from a Utilization Standpoint							
Operations Officer	19.5%	8.3%	8.3%		3.6	1.5	1.5
ADO	14.5%	10.0%	10.0%		2.7	1.9	1.9
Wing Staff (Exec/CAG)	26.3%	5.3%	5.3%		4.9	1.0	1.0
IG	2.0%	3.0%	37.5%		0.4	0.6	7.0
OST Chief	15.3%	12.5%	12.5%		2.9	2.3	2.3
OGV Chief	5.5%	6.3%	11.3%		1.0	1.2	2.1
Wing Plans Chief	3.5%	0.7%	0.7%		0.7	0.1	0.1
Question 14 - True Average of Development and Utilization							
Operations Officer	11.5%	3.3%	5.4%		2.1	0.6	1.0
ADO	7.9%	11.6%	11.4%		1.5	2.2	2.1
Wing Staff (Exec/CAG)	26.6%	10.0%	8.4%		5.0	1.9	1.6
IG	12.5%	1.5%	14.5%		2.2	0.3	2.7
OST Chief	16.4%	14.9%	8.9%		3.1	2.8	1.7
OGV Chief	15.0%	5.1%	5.6%		2.8	1.0	1.1
Wing Plans Chief	5.1%	3.6%	11.1%		1.0	0.7	2.2
Question 14 - Jobs for a post Tier 2 WO considering Development and Utilization							
Operations Officer	8.3%	2.5%	12.3%		1.5	0.5	2.3
ADO	16.3%	2.0%	2.3%		3.0	0.4	0.4
Wing Staff (Exec/CAG)	22.3%	13.0%	3.0%		4.2	2.4	0.6
IG	10.3%	16.3%	24.0%		1.9	3.0	4.5
OST Chief	19.5%	11.0%	7.5%		3.6	2.1	1.4
OGV Chief	14.5%	0.0%	5.0%		2.7	0.0	0.9
Wing Plans Chief	4.9%	3.3%	1.5%		0.9	0.6	0.3
Question 15 - What staff jobs do you think would best utilize a WOs skillset?							
MAJCOM A3	1.3%	2.5%	7.7%		0.2	0.5	1.4
MAJCOM A5	24.3%	1.5%	16.8%		4.5	0.3	3.1
HAF A3	16.5%	12.0%	12.0%		3.1	2.2	2.2
HAF A5	40.3%	2.5%	22.5%		7.5	0.5	4.2
COCOM J3	5.7%	7.5%	2.3%		1.1	1.4	0.4
COCOM J5	20.3%	6.3%	21.3%		3.8	1.2	4.0
Question 16 - Rate these programs based on how you want a CC to be developed							
PHOENIX REACH	21.5%	10.5%	10.5%		4.0	2.0	2.0
PHOENIX MOBILITY	4.0%	10.5%	19.8%		0.7	2.0	3.7
WIC	26.3%	30.5%	5.3%		4.9	5.7	1.0
Olmsted Scholar	17.3%	3.3%	8.3%		3.2	0.6	1.5
Question 17 - Risk aversion Statement from USAFWS Commandant							
	53.5%	20.3%	9.8%		10.0	3.8	0.9
Question 18 - Excess depth leads to overconfidence Statement from USAFWS Commandant							
	17.5%	25.5%	5.3%		3.3	4.8	1.0
Question 19 - Knowledge level about WOs as an incoming SqCC in regards to:							
Skillset (what can I use them for?)	N/A	13.8%	8.7%		N/A	2.6	1.6
Job placement	N/A	20.0%	2.5%		N/A	3.7	0.5
Future development	N/A	20.0%	8.7%		N/A	3.7	1.6

Methodology

A three round Delphi survey was used to gain insights from commanders from a diverse background on the utilization and development of Weapons Officers in the MAF. Voluntary panel members comprised Wing and Operations Group Commanders at all Air Mobility Command bases as well as Squadron Commanders from various MAF units across the Air Force.

Round One survey collected narrative responses which were analysed and used to shape questions posed for quantitative rating in Round Two.

Round Three presented raw score averages from Round Two and asked the panel to rate their concurrence with final recommendations based on scores and analysis. All quantitative scoring for Round Two and Three were based on a 5 point Likert Scale.

Final Recommendations

1. Candidates for the WIC should be identified as early as possible and, although individual circumstances may vary, deliberately groomed with a target goal of attendance within their 6 year TAFCSD.
2. Operational flying squadrons should organize tactics functions as a flight, preferably led by a Weapons Officer with duties and responsibilities commensurate to a flight commander, with sections determined by the squadron commander in order to achieve the squadron's required combat capabilities.
3. Commanders should consider reorganizing Wing Tactics functions directly under the Operations Group.
4. Assuming officers meet all qualifications and desired characteristics for the positions listed, Weapons Officers at operational wings should be considered for the following positions after completing Tier 1 and Tier 2 obligations. These positions provide a balance between the utilization of a Weapons Officer's skillet and professional development:

   Operations Officer, OGV Chief, Wing Staff, ADO, Wing Plans Chief, OST Chief
5. A briefing on the utilization and development of Weapons Officers in the MAF based on panel recommendations from this study would be beneficial for incoming squadron commanders at the AMC Squadron Commander's Course

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Curriculum Vita
May 2015

CHRISTOPHER D. UHLAND, Major, USAF

Student, Advanced Study of Air Mobility
Expeditionary Operations School
United States Air Force Expeditionary Center
5656 Texas Avenue
Joint Base McGuire-Dix-Lakehurst, NJ 08640-5403
Email: christopher.uhland@us.af.mil
Voice: 609-754-7320 (DSN: 650-7320)

EDUCATION

DoD Executive Leadership Development Program (ELDP); Southbridge MA, 2014
Army Command and General Staff College (correspondence), 2013
Air Command and Staff College (correspondence), 2012
Weapons Instructor Course; Nellis AFB NV, 2011
Squadron Officer School; Maxwell AFB AL, 2009
MBA, Personal Financial Planning; City University, 2008
BS, Physics; Pennsylvania State University, 2003
BS, Astronomy & Astrophysics; Pennsylvania State University, 2003

EXPERIENCE

2014 – Present	IDE Student, ASAM; USAF Expeditionary Center, JB MDL, NJ
2013 - 2014	Deputy Chief of Command Post; 60 AMW, Travis AFB CA
2012 - 2013	Chief of Wing Tactics; 60 OSS, Travis AFB CA
2012 - 2012	Flight Commander; 6 AS, JB McGuire-Dix-Lakehurst NJ
2010 - 2011	Wing Executive Officer; 305 AMW, JB McGuire-Dix-Lakehurst NJ
2009 - 2010	Chief of Tactics; 6 AS, JB McGuire-Dix-Lakehurst NJ
2008 - 2009	Chief of Training; 17 AS, Charleston AFB SC
2007 - 2008	Chief of Current Operations; 17 AS, Charleston AFB SC
2006 - 2007	Ground Scheduler; 17 AS, Charleston AFB SC
2005 - 2006	Mobility Officer; 17 AS, Charleston AFB SC
2004 - 2005	Joint Specialized Undergraduate Pilot Training Student; Vance AFB OK
2003 – 2004	Group Special Projects Officer; 89 OG, Andrews AFB MD

AWARDS

Meritorious Service Medal (1 OLC)
Air Medal (4 OLC)
Air Force Commendation Medal
Air Force Achievement Medal
Afghanistan Campaign Medal (1 Campaign Star)
Iraq Campaign Medal (4 Campaign Stars)
60 AMW Team of the Year, 2012
JSUPT Leadership Award, 2005

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 074-0188

1. REPORT DATE *(DD-MM-YYYY)*	2. REPORT TYPE	3. DATES COVERED *(From – To)*
19-06-2015	GRP	Jun 2014 – Jun 2015

4. TITLE AND SUBTITLE

Optimizing the Weapons Officer in the Mobility Air Forces

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

Uhland, Christopher D., Major, USAF

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAMES(S) AND ADDRESS(S)

Air Force Institute of Technology
Graduate School of Engineering and Management (AFIT/EN)
2950 Hobson Way, Building 640
WPAFB OH 45433-8865

8. PERFORMING ORGANIZATION REPORT NUMBER

AFIT-ENS-GRP-15-J-023

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

618 Air Operations Center (Tanker Airlift Control Center)
Brigadier General Brian "Smokey" Robinson
402 Scott Drive, Unit 2K1
Scott AFB, IL 62225
(618) 229-2209, DSN 779-2209, brian.robinson@us.af.mil

10. SPONSOR/MONITOR'S ACRONYM(S)

618 AOC/CV

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

13. SUPPLEMENTARY NOTES

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14. ABSTRACT

This graduate research paper analyzed potential recommendations commanders in the Mobility Air Forces (MAF) can implement to optimize the utilization of their Weapons Officers. To accomplish an unbiased analysis, the researcher performed a Delphi Study of 34 officers of various ranks with command experience ranging from squadron to graduated wing command. Participant backgrounds included Weapons Instructor Course graduates and non-Weapons Officers with experience in multiple airframes to gain insights from commanders developed via "depth" and "breadth" cultures. Panel members shared their perceptions and insights over three survey rounds to determine ways for operational wings to utilize the skillset WOs develop at the USAF Weapons School and enable their development in a MAF culture that values officers with a breadth of experience. The panel approved five recommendations ranging from organizational structure changes to timing and specific job placement. Major findings included the organization of a tactics office as a flight, considering placement of Wing Tactics Flight directly under the Operations Group, and focusing on optimal timing at the 6 year TAFCSD for USAFWS candidates to maximize the command's return on investment. The researcher also developed a "targeted normalization theory" to quantify cultural divergences of thought in a panel with many commonalities.

15. SUBJECT TERMS

Delphi, Weapons Officer, Mobility Air Forces, Officer development, Tactics

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Joseph R. Huscroft, Lt Col, Ph.D., USAF
U	U	U	UU	94	19b. TELEPHONE NUMBER *(Include area code)*: (937) 255-6565, x 4533 (joseph.huscroft@afit.edu)